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N. S. DAVIS, M.D., EDITOR.

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Original Contributions.

ARTICLE XXVI.

A CASE OF MASTURBATION, WITH REMARKS.

BY E. H. NEYMAN, M.D., Cedar Bluffs, Iowa.

I was recently called to see a patient, aged 20; found him sitting up, complaining of no other symptom than weakness, especially of the lower extremities. The closest questioning failed to elicit any other symptom. Pulse slow and languid; tongue moist and clean; respiration regular. The case puzzled me; but from a peculiar expression of his face, his inability to look me full in the face, and unsteady gait, I was led to suspect that he was a victim of that prolific cause of evil, torture, and misery—masturbation. Victims of this habit, wishing to conceal it, answer incorrectly questions which they suppose may excite suspicion. From notes on the careful and minute examination of several cases of self-pollution, furnished me by my preceptor and *pater*, E. M. C. NEYMAN, I was convinced of the existance of a diagnostic sign, which from the remoteness of its situation, and the inability of the patient to discover the relation between it and his pernicious habit, would be stated without reserve or contortion. There exists, in all cases I have met, or those recorded by my father, a chronic inflammation of the testes which not only produces pain in these parts, but also a pain during violent exercise, as horseback riding, referable by the patient to

the region of the external abdominal ring. I questioned my patient, indicating the region by digital pressure, ascertaining this fact, and then flatly accused him of onanism. At first he attempted to deny it, but I positively reiterated what I had said. He then confessed that he was a votary of this solitary vice; that he felt its sad influences, and at times would try to shake off the monster, but that it held him with a giant's force, his resolves at self-reform being as ropes of sand. The parents of this young man were very solicitous about his health, attributing all the difficulty to consumption. By a physical exploration of the chest, I found unmistakable evidences of phthisis pulmonalis. No hereditary predisposition could be traced. It will be remembered that BARTHEZ & RILLIET, (Diseases of Children,) place this vice in the œtiology of tuberculosis. This instance is but one of many. The vice of self-pollution is more frequent than usually imagined, numbering among its victims many of our intelligent youth. One-tenth would not be more than a fair average in the male. Of the female I am not prepared to speak positively. The effects of self-abuse are manifold and distressing, among which may be named the following: mental imbecility, nay idiocy, an awkward and irregular walk, unmanliness in the appearance, restless vision, deafness, premature gray hair, general weakness, hypochondria, impotence, decay of the spine, loss of memory, vertigo, and epilepsy. Dr. B. WOODWARD, of Galesburg, Ill., relates a case of interruption of the heart's action from this cause, (*Chicago Med. Examiner*, Vol. I., No. 3.) The pulse sank to 28, and the respiration to 5, per minute. Auscultation revealed no organic disease of the thoracic viscera. This prostrated anemic condition was sudden. As a cause of tuberculosis the authority, BARTHEZ and RILLIET have already been cited. Mr. KANE attributes some forms of night blindness to self-abuse. It is he, too, I believe, that places amaurosis as one of its sequela. MARJOLIN states, that children with a certain disease of the spinal cord, known as "Potts' disease," are usually masturbates, but whether it is a cause or an effect, he is not prepared to say. The same opinion is held by Mr. JOHNSON. If there is really any connection between the two conditions I am inclined to the con-

clusion, from observations on the adult, that it is but one of the many effects of onanism. The Reports of the Massachusetts Lunatic Asylum, give a percentage as high as 32 in 100, as a cause of insanity. Dr. CHIPLY, medical superintendent of the Eastern Insane Asylum, located at Lexington, Ky., in a little work, entitled "A Frightful Cause of Insanity," &c., thinks even this frightful percentage too small. GUISLAIN affirms that mental alienation, coming on without any manifest reason, has usually, in young persons, masturbation for a cause. Dr. CHIPLY enumerates dyspepsia and drunkenness among the effects. I remember of seeing, while a student of medicine, a patient who complained of continuous and distressing tinnitus aurium and phantasmascopia; stysis was impossible, the nearest approach to plenary styrna, being only semi-erection. In this disease, while the mind is impaired, the imagination is unbridled, which pencils pictures, gross, lascivious, and beastly. Nature becomes demoralized, and the victim left incapable of one pure sentiment.

Another curious, interesting, and important fact, is the early age at which this disease may be contracted. We have good authority (MARJOLIN), that even infants at the breast, fall into the habit. Dr. VAN BAMBEKE relates, in the "*Union Medicale*," three cases in children between the ages of ten and twenty months. A. A. W. JOHNSON, F.R.S., to whom I am indebted for much valuable matter in this paper, relates an instructive case, which came under his own observation. The patient, aged about six, commenced ailing when about two years and ten months old. He became weak and ailing, without any definite malady. Slight improvement, with frequent relapses were experienced upon the administration of tonics. Finally, deafness complicated the other symptoms; the child, instead of presenting the appearance of a healthy child, became to all appearance a little dried up old man, (*vide London Lancet.*) This was first contracted by sleeping with a young girl, 14 or 15 years of age. BARTHEZ and RILLIET, in their admirable work before referred to, say, "It is often very young children that abandon themselves to it with a fury." M. MARJOLIN observed the same thing in the Hospital des Enfans Malades, (*vide Report in the Gazette*

des Hospitaux.) FOURNIER and BEGIN relate the case of a little girl, who died in a state of woful marasmus. ZIMMERMAN also refers to the frequency of the disease.

An author, writing on this subject, says that during the paroxysm, the face becomes flushed and moist, the child oblivious, its position reclining, and eyes unusually brilliant. After the act, there follows exhaustion, non-inclination to play, pale livid face, and a dull, expressionless eye. These remarks particularize infants. I was told by a victim of self-pollution, that during one winter, she had a sparce allowance of bed clothing, and would often wake up benumbed with cold, on such occasions, she would often send the warm blood gushing through its vessels, and warming her benumbed extremities by performing the act. She would then sink to sleep. The exercise of the generative organs at a very early period, will hasten their development. Thus in Mr. JOHNSON'S patient, there were emissions; and in one of Dr. VAN BAMBEKE'S cases, a little girl, in which the periods of excitement were very frequent, a considerable development of the erectile organs existed.

Mr. JOHNSON states that it is not absolutely necessary that the patient use his hand, but that he may effect his purpose by a "peculiar convulsive or instinctive movement of the thighs." The same author concludes that the evil consequences of infancy are greater than to adolescence or maturity. This stands to reason; the nervous system being highly excitable in infancy, will take recognizance of impression sooner than the less excitable adult. While in adults the organs and faculties being forward, it can only impair; in the child, these being only forming, it both impairs and stagnates. In proof of the greater susceptibility of children, might be adduced the fact that even adolescence falls a victim to over-legitimate sexual indulgence much sooner than maturity.

Our next inquiry would be into the causes of the habit. LALLEMAND, in his elaborate work, has a long category of causes. Dr. CHIPLY'S chapter of causes embody the same. None are more prominent than the vicious and imprudent acts of attendants and associates. Especially should care be used in placing

young male infants to sleep with young girls. It will be remembered that Mr. JOHNSON'S patient contracted the disease by sleeping with a female attendant. In the same paper, he gives an illustration, the instance of a boy aged seven, who was treated by him, in the Children's Hospital, for gonorrhœa and buboes, contracted apparently while sleeping with a servant girl. The predisposing cause, Mr. JOHNSON seems to think, is the excitability of the nervous system during early life. Potts' disease has already been alluded to. Dr. VAN BAMBEKE seems to think that during dentition, where there exists an increased nervous excitability, it is frequently a cause. In males, the secretion of the *glandul odoriferi Tysoni* becomes lodged in the *fossa glandis*, behind the *corona*, producing *pruritis*, leading to onanism. Dr. CHURCHILL, in his work on Diseases of Women, gives pruritis of vulva as a cause of self-abuse, and consequently, indirectly, anything that will produce this, whether the aphthous inflammation of DEWEES' (Diseases of Fem., p. 47,) disease of the membraneous lining of the womb, of BLUNDELL, (Diseases of Woman,) superabundance of hair on external genitals, of DAVIS' (*vide Obst. Med.* Vol. I.) diabetes, of WEST, (Sec. Dis. of Fem.) lichen, prurigo and eczema, of FOURNIER, (*L' Union Medicale*, 1851,) *ascaris virmicularis in rectum*, circumscribed inflammation of vulva, or the accumulated acrid secretion of the sebaceous glands. Dr. DAVIS, in his work on Obstetric Medicine, gives enlarged clitoris as a cause. LALLEMAND, among other things, enumerates late rising, feather beds, diseases of bladder, and elongated prepuce. In reference to the latter, Dr. COPLAND says: "The neglect of circumcision, in Christian countries, is certainly no mean physical cause of the prevalence of this vice, and of the many consequences which follow." I think I may venture on the assertion, that in adult females, inflammation and ulceration of the mouth of the uterus, is sometimes a cause. Sometimes the means we employ, expecting to do the greatest good, are instruments of death; as, for instance, one patient told me that he first contracted the vice by reading a book, cautioning him against it. He said the author portrayed, in such emphatic terms, the impossibility of resisting the desire, that he naturally concluded that

the pleasure must be very great. He thought he would try it once, "to see how it would feel." The result was, he became a confirmed masturbator. These remarks apply equally well to opium eating; I know one physician, an opium eater, who contracted the habit by the emulative desire of witnessing the effect of medicines upon his own person. Popular medical education is a humbug. This is the only objection I have to Dr. CHIPLY'S otherwise admirable little volume.

It is often important that we should be able to diagnose these cases beyond cavil. In youth and adults too much importance cannot be attached to the pain referred by the patient to the external abdominal ring. In connection with the blushing, unmanly awkwardness, and unsteady gait and vision, it is almost certain. Where melancholy alternates with sudden and unexplained exuberance of mirthfulness; or imbecility with good cranial conformation, suspicion should be aroused. I have found, or imagined I have found, an unusual prominence of the os pubes, from a superabundance of adipose tissue. This, together with frequent erection, causes an unseemly prominence of the parts in the region of the genitals. This may form a valuable co-index in connection with other indices. There is also, usually, a pimple on the face, the gutta rosea, very characteristic. I never see continual successive crops of these, especially in the male, but what my suspicions are aroused. In young infants, there is usually no tendency to hide it, but it is unblushingly performed. In older children, Dr. DONNE'S test may be used. This gives chrystals of the oxalate of lime, upon an analysis of the urine. Especial care should be observed, in all our examinations, that we may not learn the object of our scrutiny the vice, if he has not already contracted it. In any thing like young children, "moral suasion" will prove futile, for no child, in consideration of all the suffering, in the future, you may be able to picture to the youthful mind, will surrender a present pleasure.

The causes, symptoms, and diagnosis having been given in detail, the most vague and unsubstantial part yet remains to be spoken of; namely, the treatment. It is here that the physician, in disease, has too often to stop in his investigation, unable to go

farther, to accomplish which, all the rest were but subsidiary. The top round in the ladder is missing, all the previous ascent is useless, for the grand object—a cure—has not been effected. Thus the pathologist may successively trace the symptoms, causes, diagnosis, and pathological anatomy of chronic hydrocephalous, epilepsy, or Bright's disease of the kidney, but if he fails in arriving at some mode of treatment, his labors have been comparatively useless. We must confess, that without the patient's aid such is nearly the position of an investigator of onanism.

As a general indication of treatment, I would say, remove the cause, as the first step; viz.: if elongated prepuce, circumcise; if hyperthrophied clitoris, amputate; if sebaceous secretion within prepuce, remove it; if pruritis, cure it; if from dentition, hasten it as much as possible; if diabetes, treat that, etc. The simple removal of the cause will be found inadequate to a cure, after the pernicious habit has once got a fair grip of the patient, who is either too young to understand how imminent his danger is, or has too little self-control to discontinue a habit. The one case will have to be restrained, in the other, the patient must be assisted to conquer that which he is insufficient alone to do. If we possessed medicines powerfully antiphroditic, either would be easy of accomplishment. But none such are embraced in our known therapeutical agents. The next best mode of cure is the establishing of an irritation, which will prevent, from pain, the use of friction. It is said that, in young children, the sudden dashing of water on the parts, while in the height of excitement, will sometimes, from the shock produced, effect a cure. It will be found most convenient in early age to pare the prepuce, place the child on a hard bed, learn it to sleep with its hands without the cover, and to enjoin a close surveillance, both night and day. This will usually be found sufficient; if not, irritation may be kept up by means shortly to be described. In grown males, if they will submit, the prepuse may be excised, if not, epispastics should be employed. The best vesicant I have found is croton oil, which does not possess the disadvantage of cantharides, which are liable to produce priapisms and strangury; or of sinapisms,

which produce a blister, instead of distinct and interrupted vesicles or pustules. These may be kept open by either unguentum cantharidis, or unguentum antimonii. I have frequently thought that if an impervious vagina, incapable of transmitting impressions, could be so constructed as not to incapacitate micturition, that it would afford material aid in assisting the patient in breaking loose from this vice. My idea is vague and flippant. I would have a belt pass around the body and fasten by lock and key, as in anchylosis apparatus. In grown females, the general indication to remove the cause should be followed, and then if an educated female conscience, and an innate female modesty and purity does not restrain them, they *are not worthy of treatment.*

And now I come to speak of *dernier resort.* It is well known that castration has been frequently resorted to, in the cure of epilepsy, having masturbation as a cause. When all other means fail, and epilepsy, idiocy, or insanity are imminent, I would unhesitatingly advise castration.

Before we close, there is one interesting point in the discussion of onanism, which is well worth a moment's consideration. The victim of self-abuse often quiets his conscience by asking why moderate onanism should be productive of more mischief than an equally moderate amount of legitimate indulgence? Is it because of the morbid excitement of the mind, the humiliation of an educated and intelligent conscience, or as some fanciful empiric suggests, may not there exist two kinds of electricities, which at the acme of excitement mutually replace each other, establishing an equilibrium, during normal sexual intercourse, but that during masturbation but one kind of electricity alone is expended? Dr. W. GOODELL, member of the Imperial Society of Constantinople, in an article entitled "Turkey from a Medical Point of View," says:—"Neither onanism nor pedarastry, both of which prevail to a frightful extent in the East, emasculate the *morale* of the Oriental as much as they do the European." The restlessness, unmanliness, and unsteady vision are not seen. In explanation of this anomaly, he thinks we may draw one or two inferences; namely, that it should be attributed more to the "humiliation of an educated conscience than any physical drain

from the system; or where society openly upholds a vice it is not so apt to be intemperately abused, as when local rules of propriety, and militant precepts of religion compels the votary to invest the indulgence in strict privacy," (*vide N. A. Med. J.*, Vol. V., No. 3.)

ARTICLE XXVII.

ARMY REPORTS.

FROM H. WARDNER, M.D., Brigade-Surgeon.

CORINTH, MISSISSIPPI, *Sept.* 9, 1862.

PROF. N. S. DAVIS.

DEAR SIR: — I send you herewith a copy of the remarks accompanying the reports of two of the surgeons of our division. Together they give a very clear idea of the condition and treatment of the men generally in this division.

The following is taken from the summary of my consolidated monthly report for August, 1862.

Mean strength, (*i. e.*, those present,) 7189.

Number treated, 1703, (this includes all diseases, both chronic and acute, for the month.

The daily average on the sick list is about 600.

Deaths during the month, 23.

Remarks accompanying the Monthly Report of Surgeon H. C. FOOTE:—

CAMP 22D OHIO VOL. INF., NEAR CORINTH, MISS., *August* 31, 1862.

There have been in the regiment scarce any cases of fever of a grave character, almost all have been tertian intermittents, and all yielding readily and permanently to quinine.

The camp is situated on elevated ground, which is dry and airy, but has been in use for that purpose for several months. A little west of north, and about 500 yards distant, the ground is low, flat, and damp, but not swampy.

The supply of water is abundant, but not very good, consisting too much of surface water.

The prevailing diseases have been diarrhœa and dysentery, often very obstinate, and in some cases terminating in ulceration of the bowels, in spite of every effort.

Various plans of treatment have been resorted to, all successful in mild cases; all ineffectual occasionally. Most cases of diarrhœa were readily controlled by mild mercurials, not pushed to ptyalism, followed by astringents and opium. The saline treatment proved efficacious in many cases of both diseases, but on the whole has not accomplished as much good as I had hoped. Some obstinate cases of diarrhœa and dysentery, which resisted other treatment, have been much benefited by the administration of Fowler's solution and laudanum.

Nitrate of silver and sulphate of copper have hitherto failed in accomplishing any good results, and, in some cases, both of diarrhœa and dysentery, undoubtedly aggravated the disease.

There has been a deficiency in the supply of medicines, until within a very short time, and I have, in consequence, been prevented from following the course of treatment that seemed most proper in many cases; and, also, debarred from full observation and comparison of different plans of treatment.

The rations of the men have been abundant, of good quality, and sufficiently varied; but the cookery has been, and is, as a general rule, abominable. The frying-pan has been the chief dependance, and the soups, as a general rule, are greasy and ill-flavored. The men pay but little attention to the advice or remonstrance of the surgeon on these points, and it is only when the company officers second his efforts that any good result is accomplished, and this happens so seldom that the general health of the regiment is not affected at all. It is, however, proper to state that cases of diarrhœa and dysentery have occurred in patients in the hospital, under treatment for other diseases, and whose diet was carefully regulated.

There have been no cases of scurvy, pure and simple, during this month, and scarce any since the regiment has been in service, but very many of the patients have suffered in a way that

could not be accounted for, except on the supposition of some scorbutic taint. In various instances, but generally in cases of diarrhœa and dysentery, there has been marked œdema of the lower extremities, and sometimes of the face also. Partial paralysis of one or more limbs has not been uncommon, and in one or two cases, which proved fatal, there was ecchymosis, in one case quite extensive.

The treatment most successful with these cases, after subduing the active disease, was the administration of iron and acids, and nourishing diet.

There have been but few cases of disease of the respiratory organs, and these not severe.

The regiment has had a sufficient good supply of good tents, has not been on the march, and the weather has been favorable. There have been occasional showers but not long-continued rain, and no intensely hot weather.

Owing to want of instruments, I cannot give variations of temperature, etc.

Very respectfully,

H. E. FOOTE,

Surgeon 22d Reg't. Ohio Vol. Inf.

Remarks accompanying the Monthly Report of Surgeon C. B. LAKE, 7th Iowa:—

SURGERY.—None in regiment.

FEVER, Continued or Typhoid.—None.

REMITTENT—Type mild—Symptoms usual.—*Treatment.*—A free purge of Sulph. M. G. or Hyd. Sub. Mur. and Castor Oil, followed by two or three 5 gr. doses Sulph. Quinina, and the case is arrested. Sulph. Cinchonia and Brandy are used as a tonic, if any after treatment is required.

INTERMITTENT—No unusual symptoms.—*Treatment.*—From 8 to 10 grs. Sulph. Quinina at one dose, as soon as the sweating stage is established, with 6 to 8 grs. pill Hyd., and that followed next day by a purgative, if the secretions are not active.

DIARRHŒA AND DYSENTERIA—Grade active.—*Cause.*—The eating of green fruits, pies, and other indigestible substances.

Treatment.—Thoroughly evacuant, at first followed by Ano-

dyne and sometimes full doses of Sulph. Quinina. A common prescription with me, is:

℞.—Sulph. M. G. ..... ℥i.
Tart. Ant. et Potas, ... ½ to 1 gr.

Mix and give. Repeated next day or day after, if necessary, followed by 5 gr. doses Pulvis. Doveri, if there is pain of the bowels. Wet cupping when there is tenderness of abdomen; perfect quiet; abstinence from all cold drinks; no food, except rice water or gruel. Under this treatment, it is altogether the exception if a case becomes chronic.

Chronic Diarrhœa and Dysenteria.—Chronic fluxes of the bowels have been the scourge of this regiment, and they are found in all forms and stages of the disease. The cause, I believe to have been the use of astringents and opiates, in the treatment of the acute disease. The treatment I have found most successful, since I came to the regiment, (which was last April,) is careful diet, dry cupping, counterirritation over the abdomen, and the exhibition of from 3 to 5 drops of Fowler's solution, two or three times daily. Under this treatment a large per cent. of the cases have entirely recovered.

Respiratory Diseases—Character mild—Symptoms usual. *Treatment.*—Moderately antiphlogistic and expectorant, with quinina if showing miasmatic symptoms.

Rations.—The ration consists of flour, made into light yeast bread, and baked in adoba ovens; rice, bacon, and pickled pork two-thirds and fresh beef one-third of the time,—the beef being made mostly into soup; potatoes and onions whenever they can be procured; coffee.

The troops are sheltered with tents, of which there is a scant supply, except for the dry season. The weather is mostly dry. Wind South most of the time, occasionally changing to N.W.

Location of Camp.—The camp is located on dry table land, on the south side of a creek, fronting to the South. Sinks in the rear of regiment are filled every morning with fresh earth. Camp thoroughly policed. Tents struck frequently, and ground swept. Men all made to build bunks of polls or boards, about 18 inches from the ground, on which they sleep comfortably.

ARTICLE XXVIII.

CASES OF GUNSHOT WOUND.

Reported by O. B. ORMSBY, Assistant-Surgeon 18th Reg't. Ill. Vols.

W., of Stewart's Cavalry, aged 21 years, dark hair, black eyes, robust and in good health, was wounded July 28th, by a shot from a carbine or Maynard rifle, which entered his right shoulder, one and a-half inches below and posterior to the acromion process of the scapula, passed directly through the head of the humerus, and made its exit two and a-half inches below the middle of the clavicle. He was transported about 20 miles in an ambulance to the general hospital at Jackson, Tenn. Upon examination, it appeared that the ball had passed through the head of the bone without producing a great amount of comminution, and it could not be ascertained with certainty that the bone was at all injured by cracking or splitting outside the track of the ball. In the absence of positive assurance of greater injury, it was decided to rely upon the recuperative energies of nature to effect a cure. Resection was spoken of, but not being deemed absolutely necessary, was not performed. He was ordered cold dressings, which were continued without other interference, until July 31st., when he had sulph. magn. ℥ji. to relieve constipation. Cold dressing alone was then resumed, and continued until Aug. 8th, when he had Rochelle salts, ℥ss., which failing to produce action of the bowels was repeated upon the following day. Cold dressing was again resumed until the 11th, when he had sulph. magn, ℥i. in two doses, taken six hours apart. Cold dressing again. On the 14th, was ordered stimulants and generous diet, which was continued up to the 20th, when the discharge had nearly ceased. His bowels being somewhat torpid, and his skin showing evidence of biliary derangement, he had on that day sub. mur. hydrarg. grs. v., at once. 22d. Hydrarg. cum creta, grs. x. Two powders given, six hours apart. 24th. Hydrarg. cum creta, pulv. Doveri, aa. grs. v., M., take at once. 25th, Hydrarg. cum creta, grs. v., at once. 26th. Fluid ext. prunus

Virginiana, ℥ss., at intervals of three hours. 30th. Returns home soon; flesh and appetite good; soreness pretty much all gone. No more discharge of pus, and some motion in the joint. Only one or two small pieces of bone were discharged from the wound during the entire time. Had at first a little irritative fever, which immediately yielded when the bowels were freely opened.

In my opinion, this patient made a more speedy recovery, and will have a more useful limb than could have been secured to him by any operation whatever.

S. L., Irish, aged 38 years, wounded July 29th, by musket shot, which entered near the left scapula, and made its exit between the fourth and fifth ribs, of the same side, about two and a-half inches posterior to the left mamma. Was admitted to the general hospital, Aug. 2d, when there was considerable febrile excitement; pain in the left breast; difficulty of breathing; and occasional cough, with expectoration of blood. The wound was carefully examined, and all foreign substances were removed. The wounds were then dressed with compresses dipped in cold water; and as he complained of slight diarrhœa, was directed to take opium, grs. iii., sub. nit. bismuth, grs. xv., M., Divide into three powders, one every two hours. Aug. 3d. Dress with water. Aug. 4th. No movement of the bowels since the day before yesterday. Pulse 100, strong, tongue coated; give Rochelle salt, ℥js. at once. Complains of much pain and restlessness at night, for which he had morphia sulph. grs. iii., in six parts, to be used at discretion of the nurse. 5th. Salts acted on the bowels, and from this day to the 9th, he had cold dressings and an occasional dose of morphia. On the 9th, the fever was abated, and the patient complains but little; but whenever he coughs, which is frequently, air is driven forcibly through the anterior wound, accompained by bloody serum and pus. He was directed to take pulv. Doveri, grs. vi., at every severe paroxysm of cough; also, to have porter or wine. 10th. Bowels torpid; give Rochelle salt, ℥js.; continue cold dressing. 11th. Bowels have not moved; magn. sulph. ℥ss. 12th. Wine. 13th. Sulph. magn. ℥ss. 14th. Wine. 15th. Brandy toddy. 16th.

Continue toddy, and give Rochelle salt, ℥ss. 17th. Toddy. 18th. Very weak; bowels costive; give sulph. magn. ℥i., whiskey, ℥viii., M., and give ℥ss. every two hours, until the bowels move. 19th and 20th. Toddy. 21st. Has had fever two afternoons in succession; give sulph. quinina, grs. x., aromat s. acid, ℥ss., ether sulph. ℥i., aqua, ℥iv., M., tablespoonful every two hours. 22d. Wine. 23d. To-day, the air ceased to pass out through the wound. 24th and 25th. Wine. 26th. Has diarrhœa; takes Hope's mixture, ℥iv., every two hours. 27th. Continued. 28th. Wound in the back is closed. 29th. No more wine; rest, and good diet. Sept. 2d. Needs only a little more flesh to make him fit for duty.

In each of these cases, the sulph. magn., even when it failed to act on the bowels, appeared to remove the febrile excitement almost entirely.

DANGEROUS FASHIONABLE FOLLY—GREEN ARTIFICIAL FLOWERS.

An analysis of green artificial flowers has been made by Prof. Hoffmann, for the Ladies' Sanitary Association; he says:—

"In a dozen of the leaves sent me, analysis has pointed out on an average, the presence of ten grains of white arsenic. I learn from some lady friends that a ball-wreath usually contains about fifty of these leaves. Thus a lady wears in her hair more than forty grains of white arsenic, a quantity which, if taken in appropriate doses, would be sufficient to poison twenty persons. This is no exaggeration, for the leaves sent to me were—some of them at least—only partly colored, others only variegated. In consequence of some inquiries, I have been led lately to pay more than usual attention to the head-dresses of ladies, and I observe that the green leaves are often much larger and more deeply colored than those which I have received.

"Ladies cannot, I think, have the remotest idea of the presence of arsenic in their ornaments. If aware of their true nature, they would be satisfied with less brilliant colors, and reject, I have no doubt, these showy green articles, which have not even the merit of being, as far as coloring is concerned, a truthful imitation of nature."—*Medical News and Library.*

ARTICLE XXIX.

CLINICAL REMARKS ON THE BOWEL-AFFECTIONS OF CHILDREN IN THE MEDICAL WARDS OF THE MERCY HOSPITAL.

By N. S. DAVIS, M.D., Professor of Clinical Medicine, &c.

GENTLEMEN: — In a preceding clinic, I directed your attention to several cases of diarrhœa in children, and described to you the different varieties of bowel-affections met with in general practise; their history and characteristic symptoms; and the causes, both remote or predisposing, and exciting. This morning, I shall make some brief comments on the pathology of these affections, and then give you my views in regard to the principles on which their treatment should be conducted. From the careful review of the causes which are most efficient in producing this class of diseases, and their *modus operandi*, which was made at the preceding clinic, you will readily infer the most important items connected with their pathology. It was then shown that all the causes concerned in the production of the diarrhœa, cholera morbus, and dysentery of young children, cooperated to produce an increased susceptibility or irritability of the mucus membrane of the stomach and bowels, with a diminution of vital affinity, and consequent relaxation of the capillary system of vessels. This morbid excitability, coupled with impaired tonicity of the mucous tissue, constitutes the primary pathological condition in all the first and second groups of cases mentioned in the former lecture. The morbid excitability of the membrane invites a rapid influx of blood into it, while the diminished vital affinity and consequent relaxation of the texture admits of an equally rapid effusion or exudation of the serous part of the blood, and thus furnishes the matter for the copious thin discharges. The rapid loss of the watery element of the blood, carrying with it the salts by this effusion into the stomach and bowels, speedily diminishes all the glandular secretions, such as urine, bile, gastric and salivary juices, etc.; retards organic or molecular changes in all the tissues, thereby diminishing the

evolution of caloric; and causes a marked shrinking of the whole body.

The morbid sensibility of the nervous filiments involved in the mucous membrane, acted upon by the effused fluid, calls into action a reflex influence upon the muscular coat, and thereby establishes the frequent efforts to evacuate the stomach and bowels. Such are the pathological conditions which constitute the active stage of these diseases.

They cannot exist long, however, without inducing other pathological changes of no less importance. Thus the continuance of the serous discharges more or less rapidly exhausts the blood of its water and salts, leaving it too viscid to circulate freely through the capillary system of vessels; while the rapidity of effusion through the mucous membrane carries with it more or less of the epithelial cells of that membrane which may be easily detected in the evacuations by the aid of a microscope. If vomiting exists to such an extent as to prevent the retention of drinks long enough to afford any replenishment of the water in the blood, there will be danger of an entire suspension of capillary circulation, and a speedily fatal collapse. Or the increased viscidity of the blood may so modify its relation to the capillaries of the mucous membrane, as to stop the effusion and consequent discharges spontaneously before the state of collapse is reached. If the discharges thus cease before complete collapse ensues, rest and a judicious replenishment of the blood by liquid nourishment, soon restores the patient to health, in the majority of cases; but in some, another pathological state is developed which should never be overlooked. I have said that, during the active stage of diarrhœa or cholera morbus, the rapid efflux of fluid through the mucous membrane carried with it more or less of the epithelial cells of that membrane, and thereby produced more or less impairment of the texture.

Hence it happens that, when the discharges cease, capillary circulation and organic actions are resumed, and the patient is said to have a healthy reaction fairly established, the impairment of texture in some portions of the mucous membrane is such that the capillaries are incapable of resuming their circu-

latory function. Hence the blood accumulates in them; a low grade of inflammatory action is established in a few hours; and the general reaction passes beyond the healthy standard to that of fever; and, in common professional phraseology, the patient has passed from an attack of serous diarrhœa or cholera morbus to that of secondary enteric or typhoid fever. The asthenic grade of inflammation thus set up, may gradually subside and allow convalescence to be established in from one to three weeks, or it may progress through the successive stages of softening and ulceration, ending in the exhaustion and death of the patient. But the mucous membrane is not the only structure, in which the capillaries may fail to resume their function, when the active discharges cease, and the stage of reaction has come. When the attack has been violent, and the amount of serous discharge so great as to produce a very marked deficiency of water in the blood, the latter may become so altered in its relation to the capillaries of the brain that the circulation becomes too feeble to sustain the function of the cerebral hemispheres. In such cases, though the intestinal discharges may cease, the circulation and warmth be restored to the extremities, and a general appearance of healthy reaction be established, yet the patient passes into a state of more or less complete coma, from which it seldom recovers.

Another, and perhaps more frequent local failure in the resumption of capillary action, is in the kidneys. In the preceding lecture, I told you that one of the early effects of rapid and copious discharges from the mucous surface of the alimentary canal, was a partial or complete suppression of urine. It sometimes happens that when the active intestinal discharges cease, reaction takes place generally, but the secreting structure of the kidneys fails to keep pace with the improvement in other textures. Consequently no urine is secreted, and symptoms of uremic poisoning are speedily developed.

Such are my views of the pathology of the different stages of the first two groups of bowel-affections, described in the preceding clinic. The pathology of the third group of cases, which we described as accompanied by fever from the commencement

of the attack, differs in one primary element from the first two. There is the same morbid susceptibility or irritability of the mucous membrane, and consequently the same unnatural influx of blood into it; but the general relaxation of the capillaries, which in the first cases allowed a rapid escape of the fluids constituting serous discharges, does not exist in this group. Consequently, although the efforts at vomiting or purging, or both, may be frequent and severe, yet the amount of fluids actually evacuated is not large, and they are found to consist largely of mucus, thereby indicating the existence of inflammation.

These pathological views afford us clear and definite indications for treatment in each successive stage of these diseases. Thus, in the first stage of those cases characterized by simple serous discharges, either by vomiting or purging, the indications are to allay the morbid irritability of the mucous membrane, and to increase the tone or contractility of the capillaries. To fulfil these, requires the judicious combination of a tonic and anodyne.

Among the best combinations of this kind are the following:

℞.—Aromat. Sulph. Acid, ... ℥j.
Sulph. Magnesia, ... ℥j.
Tinct. Opii. ..... ℥j.
Simple Syrup, ... ℥j.
Water, ... ℥j.

Mix, and give to a child one year old, 15 drops every two, three, or four hours, according to the frequency of the discharges.

℞.—Tannate of Quinine, ... 4 grs.
Pulv. Opii. ..... 1 gr.
White Sugar, ... 20 grs.

Mix, and divide into eight powders, of which one may be given every three, four, or six hours, to a child of the age just mentioned.

In the early part of mild cases, the use of one or the other of these formula will generally speedily restore the patient to health. But if the attack is more severe, charcterized by, not only frequent serous discharges, but also partial or complete suspension of important secretions, such as urine and bile, we

must combine the anodyne with an *astringent* instead of a tonic, and add to both a small dose of some alterative to aid in restoring these important glandular secretions. In such cases, if the vomiting is frequent, and more especially if the matters ejected are sour, I make a solution of bi-carbonate of soda one drachm, and sulphate of morphine one grain in two ounces of water; and of this give from 6 to 15 drops, according to the age of the child, immediately after each act of vomiting. At the same time, give one of the following powders, every three hours, until the discharges cease, viz.:

℞.—Hydrarg. Chlorid. Mite, ... 3 grs.
Acetas Plumbi, ... 3 grs.
Pulv. Opii. ..... 1 gr.
Sacchar. Alba, ...20 grs.

Mix, divide into six powders.

The rule to give whatever medicine is designed to suppress the vomiting, in small doses, *immediately* after each act of vomiting, is one of much practical value.

Vomiting is an act that cannot be perpetuated continuously, but must always occur in paroxysms with an interval of greater or less length between them. Hence, if a dose of medicine is swallowed immediately after a paroxysm of vomiting it will remain in contact with the mucous membrane of the stomach a few minutes, at least, before another effort at vomiting can be performed. During these few minutes, if the medicine is soluble or already in solution, it will gain some effect, both on the nervous filiments and the capillaries of the mucous membrane. And a repetition of the dose immediately after each paroxysm of vomiting, will soon accumulate an effect sufficient to destroy the morbid sensibility, and consequently stop the vomiting. But if we follow the wishes of the patients, and the inclination of almost all nurses, by withholding the medicine after vomiting until the patient has "rested a little," that little period of rest is just sufficient for the muscular coat to regain its contractility, and the mucous coat to pour out a new supply of serous fluid, and consequently the patient is all ready for another paroxysm of vomiting. Now, if the dose of medicine is administered, in

nine cases out of ten, it will be rejected almost as quick as swallowed, and the effect is lost.

The same rule is equally important in reference to the use of enemas for aiding in the suppression of diarrhœa or dysentery. They should always be administered as speedily after an evacuation as possible, and while the rectum is entirely empty. The longer the enema is delayed after an evacuation, the more mucous or serous fluid has accumulated in the intestine, and the more readily will the introduction of the enema be followed by an immediate expulsion. You thus see, gentlemen, that in the more violent gastric and intestinal affections, success in their treatment depends almost as much on the time and manner of administering medicine as on the kind of medicine chosen.

I have just stated, that in those cases characterized by frequent vomiting of serous fluid and intestinal discharges, thin and destitute of the coloring matter of bile, small and frequent doses of a solution of morphine and soda, with less frequent doses of calomel and acetate of lead, usually constituted the most efficient means for checking the active progress of the disease, and at the same time favoring the restoration of secretion in the more important organs of depuration, as the kidneys and liver. But many cases are met with, in which the discharges, instead of being sour and destitute of the coloring matter of bile, are all bitter and highly colored with the latter fluid, thereby showing a superabundance instead of deficiency of the biliary secretion. In such cases, instead of giving alkalies or alkaline salts and mercurials, all of which tend to increase glandular secretions, I resort directly to the simple combination of anodynes and astringents, as follows:

℞.—Acetas Plumbi, ...15 grs.
Sulph. Morph. ..... 1 gr.
Aqua, ... ℥jj.

Mix, and give to a child one year old, 10 drops after every paroxysm of vomiting; or if the vomiting ceases, and the intestinal discharges continue, the same dose may be continued every three or four hours. In using simple anodynes and astringents, it must be remembered that copious intestinal evacuations are

almost always accompanied by scantiness of urine, and that the suppression of such evacuations by opium and simple astringents, whether mineral or vegetable, often leaves the kidneys still in a very inactive state. This difficulty can generally be obviated by giving the child a teaspoonful of the following, between each of the doses of opium and acetate of lead:

℞.—Spts. Nit. Dulc. ..... ℥ss.
Acetas Potassa, ... ℥ij.
Simple Syrup, ... ℥ijss.

Mix. Shake it up when used.

This seldom offends the stomach, and renders efficient aid in restoring a healthy action of the kidneys.

When the acute stage of cholera infantum and serous diarrhœa has passed by, and the disease assumes a chronic form, with rapid emaciation, coolness of the surface and extremities, and the intestinal discharges still thin, with no dysenteric straining, and little or no intermixture of mucus, then I find some one of the following formulæ to afford relief:

℞.—Erigeron Can. herb, ... ℥ss.
Tannate of Quinine, ...20 grs.
Sulph. Morph. ..... 1 gr.

Mix. Pour on the whole half a pint of boiling water, to make an infusion. When cold, give to a child one year old, a teaspoonful every two, four, or six hours, according to the frequency of the discharges. This combination has the advantage of being moderately diuretic and tonic, while it is efficiently anodyne and astringent, and has been much used by me for several years past.

In mild chronic cases, in which the evacuations show an excess of acid or sourness, the following will often answer the purpose well:

℞.—Fluid Chalk Mixt. ..... ℥jss.
Tinct. Cinnamon, ... ℥ss.
Camph. Tinct. Opii. ..... ℥j.

Mix, and give from 10 to 30 drops, according to the age of the child, three or four times a day.

In protracted cases, accompanied by an anemic condition of

the patient, the liquor ferri nitratis, in suitable doses will be found very valuable.

Five or six drops of this preparation of iron may be given to a child between 12 and 18 months old, at each mealtime, and one of the following powders at bedtime, viz.:

℞.—Tannate of Quinine, ... 3 grs.
Pulv. Opii. ..... 1 gr.
Hydrarg. cum creta, ... 3 grs.
Sacchar. Alba, ...20 grs.

Mix, divide into six powders.

This is substantially the treatment we directed for the several children you examined at the last clinic.

The third group of bowel-affections of children, those which were described as accompanied by fever and mucus in the discharges, involve a true inflammatory condition of mucous membrane, and their treatment involves the same principles as the treatment of enteric fever and dysentery in adults. Hence, it will be more appropriately discussed when we have cases of those diseases before you.

Selections.

REPORT OF THE COMMITTEE OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY, ON THE SUBJECT OF SUSPENDED ANIMATION.

The inquiry was conducted—
By means of experiments upon living animals;
By means of experiments upon the dead human body.

In investigating anew the subject of apnœa by means of experiments on the lower animals, it seemed expedient to observe, in the first place, the principal phenomena of apnœa in its least complicated form—namely, when produced by simply depriving the animal of air.

The principal facts to which attention was directed during the progress of the apnœa thus induced were—
The duration of the respiratory movements;
The duration of the heart's action.

The duration of the heart's action was observed—

(*a*) In relation to the duration of the respiratory movements.

(*b*) In relation to the time after the stoppage of the breathing.

From the experiments performed, it appeared that in the dog the average duration of the respiratory movements, after the animal has been deprived of air, is 4 min. 5 sec., the extremes being 3 min. 30 sec. and 4 min. 40 sec. The average duration of the heart's action is 7 min. 11 sec., the extremes being 6 min. 40 sec. and 7 min. 45 sec.

From these experiments, it appears that on an average the heart's action continues for 3 min. 15 sec. after the animal has ceased to make respiratory efforts, the extremes being 2 min. and 4 min. respectively.

Rabbits, on an average, ceased to make respiratory efforts in 3 min. 25 sec. Their heart's action stopped in 7 min. 10 sec.; consequently the interval between the last respiratory effort and the cessation of the heart's action was 3 min. 45 sec.

The next question investigated was—the period after the simple deprivation of air at which recovery is possible, under natural circumstances, without the aid of any artificial means of resusitation.

The experiments performed led to the conclusion that a dog may be deprived of air during 3 min. 50 sec., and afterwards recover without the aid of artificial means; that a dog is not likely to recover, if left to itself, after having been deprived of air during 4 min. 10 sec.

The force of the inspiratory efforts during apnœa was observed in the experiments to be so great that it was determined to measure them. They were found to be capable, in the dog, of raising a column of mercury four inches. It appeared, moreover, that their force increases up to a certain period.

In other experiments, plaster of Paris, and even mercury, were thus drawn upwards into the minute bronchial tubes.

It is easy to understand, therefore, how foreign bodies may be drawn into the lungs, in cases of drowning, and the importance of this fact in the consideration of the pathology and treatment of apnœa.

The committee next passed on to the subject of drowning.

The first question investigated was—For what period can an animal be submerged, and yet recover without the aid of artificial means?

It was found, as the result of numerous experiments on dogs, that in striking contrast to the previous ones, 1½ minute's immersion in water suffices to destroy life.

Other experiments satisfactorily showed that the difference of time between simple apnœa and that by drowning is not due to submersion, or to depression of temperature, or to struggling, but that it is connected with the fact, that in the one case a free passage of air out of the lungs, and of water into them, is permitted; in the other, the exit of air and the entrance of water are prevented.

There can be no doubt, from other considerations put forward, that although both these circumstances are concerned in producing the difference observed, yet that it is mainly due to the entrance of water and the effects thereby produced.

The treatment of apnœa was next considered.

For conclusions respecting artificial respiration, the committee refer to the second portion of the Report.

Many other methods of resuscitation which have been recommended were employed, including actual cautery, venesection, cold splash, alternate application of hot and cold water, galvanism, puncture of the diaphragm.

Although some of the above means were occasionally of manifest advantage, no one was of such unequivocal efficacy in a sufficient number of cases as to warrant the committee in specially recommending its adoption.

The experiments upon the dead subject were made with a view to determine the value of the various methods which have been employed for alternately compressing and expanding the cavity of the chest in such a manner as to imitate the natural movements of the thoracic walls in breathing. The following methods have been investigated:—

1. Pressure exerted by the hands on the anterior wall of the thorax, the body being in the prone posture. Such pressure has for its object, to expel a portion of the air contained in the chest; on relaxing the pressure, the chest expands and air enters.

2. The postural, or so-called "ready" method, described by Dr. Marshall Hall, consists essentially in "turning the body gently on the side and a little beyond, and then briskly on the face alternately;" and in making pressure along the back of the chest each time the body is brought into the prone position.

3. The method of Dr. Silvester, in which the action of the pectoral and other muscles passing from the shoulders to the parietes of the chest in deep inspiration is imitated. An inspiratory effort is produced by extending the arms upwards by the sides of the head; on restoring them to their original position by the side of the body, the expanded walls are allowed to re-

sume their previous state, and expiration takes place, the quantity of air expelled being in proportion to that which had been previously inspired.

It being necessary to measure the flow of air in and out of the respiratory cavity under conditions of pressure closely resembling those which exist in natural respiration, no means of measurement could be used, which, in its working, would offer any appreciable resistance to the passage of air. With this consideration in view, an instrument designed by Dr. Sanderson was employed.

GENERAL RESULTS.

1. As regards the volume of air which can be expelled from the thorax by compression of its walls, and inspired by the elastic expansion consequent on relaxation of the pressure, it was found —

(*a*) That pressure by both hands on the lower third of the sternum in the adult male subject usually displaced from 8 to 10 inches of air.

The pressure actually exerted amounted to about 30 lbs. It was, therefore, not greater than might be safely applied to the living subject. The volume of air expelled varied from 8 cubic inches to 15 cubic inches.

(*b*) That pressure made in the same manner on the upper part of the sternum usually displaced 2 or 3 cubic inches less than pressure on the lower part.

(*c*) That pressure exerted by one hand on the upper part, by the other on the lower part of the sternum, produced about the same results as were observed in *a*.

In this case, the whole amount of pressure did not exceed that exerted in *a*.

(*d*) That the pressure of a weight laid on the lower third of the sternum produced similar results according to its amount.

(*e*) That lateral pressure exerted on the ribs or costal cartilages of both sides simultaneously was in no instance more effectual.

(*f*) That compression by a broad bandage encircling the chest, the ends of which were crossed over the sternum, and drawn in opposite directions by two persons, produced no greater effect than pressure with the hands on the sternum or sides.

2. As regards the whole amount of exchange of air produced by the method of Dr. Marshall Hall, "to imitate respiration," it varied much, according as the subject was favorable or the contrary; sometimes not exceeding a few cubic inches, but never exceeding 15 cubic inches.

3. As regards Dr. Silvester's method, it was found, that on extending the arms upwards, a volume of air was inspired into the chest, which varied, in different subjects, from 9 to 44 cubic inches, and it was observed that the results obtained in successful experiments on the same body were remarkably uniform, in which respect, as well as in their amount, they contrasted with those obtained by the method of Dr. M. Hall. On restoring the arms to the side, the quantity of air expelled was generally nearly equal to that previously inspired, occasionally less.

In the treatment of apnœa generally, the committee offer the following suggestions:—

That all obstruction to the passage of air to and from the lungs be at once, so far as is practicable, removed;—that the mouth and nostrils, for example, be cleansed from all foreign matters or adhering-mucus.

That in the absence of natural respiration, artificial respiration by Dr. Silvester's plan be forthwith employed in the following manner:—The body being laid on its back (either on a flat surface, or, better on a plane inclined a little from the feet upwards), a firm cushion or some similar support should be placed under the shoulders, the head being kept on a line with the trunk. The tongue should be drawn forward so as to project a little from the side of the mouth. Then the arms should be drawn upwards until they nearly meet above the head (the operator grasping them just above the elbows), and then at once lowered and replaced at the side. This should be immediately followed by moderate pressure with both hands upon the lower part of the sternum. This process is to be repeated 12 or 14 times in the minute.

That if no natural respiratory efforts supervene, a dash of hot water (120° Fahr.) or cold water be employed, for the purpose of exciting respiratory efforts.

That the temperature of the body be maintained by friction, warm blankets, the warm bath, etc.

In the case of drowning, in addition to the foregoing suggestions, the following plan my be in the first instance practised:—Place the body with the face downwards, and hanging a little over the edge of a table, shutter, or board, raised to an angle of about 30 degrees, so that the head may be lower than the feet. Open the mouth and draw the tongue forward. Keep the body in this posture for a few seconds, or a little longer if fluid escapes. The escape of fluid may be assisted by pressing once or twice upon the back.

[Signed by the Committee of eight, C. J. B. Williams, Ch'm.]

Dr. C. J. B. Williams said, that if the subject of suspended animation and its treatment appeared to be one of the greatest importance when the committee were appointed for its investigation, the result of their labors did not make it less so; for during their researches, several new points of both physiological and practical interest had arrested their attention. The Report just read contained a large mass of facts bearing on the subject, and these facts would be fully appreciated when they should be maturely considered; but the members of the committee thought it might be acceptable to the Society if one of their body were to give a short summary of some of the most striking results. He (Dr. Williams) had been requested to do this since he entered the room, and not having been previously aware of the office which would devolve on him, he was not prepared to go fully into details; but he believed that he was sufficiently acquainted with the general results of the experiments to be enabled to give a summary of their most important features. He would premise that he could take no merit to himself with regard to the experiments which had been so ingeniously devised and laboriously carried on by other members of the committee. He had been present at very few of the experiments themselves; but, as chairman of the committee, had merely assisted in receiving and completing the reports from the sub-committees. The committee, having to consider the subject of "Suspended Animation," directed their inquiries to that kind of interference with life which results from stoppage of the breath in suffocation, strangulation, and drowning.

The first series of experiments was to investigate the result of simple apnœa, or stoppage of the breath; and for this purpose the trachea of animals was opened, and a tube inserted so as to command the supply of air; and this tube being furnished with a stop-cock could be closed, and the results noted, especially these:—After the closure of the tube, 1, how long respiratory efforts continue; 2, how long the heart's action continues; 3, how long the heart beats after the breathing efforts cease. The experiments show a considerable variety of result; but, as a general average, it may be stated that in dogs efforts at breathing continued a few seconds more than four minutes after the closure of the tube; and the heart's action three minutes and a-quarter longer. The duration and force of these respiratory efforts, in an animal deprived of air, were not more remarkable than important, as indicating the period within which an animal deprived of air could recover; and this was found to be almost, but not quite, as long as the duration of these efforts—

that is to say, a dog deprived of air four minutes only, would recover; but if the exclusion of air lasted ten seconds longer, he did not recover. The extraordinary force of these struggles for breath was shown by plunging the end of the tube into mercury; when it was found that the inspiratory effort sometimes raised a column of four inches of mercury, and, if the tube was shorter, would draw the quicksilver in considerable quantites into the bronchial tubes and air-cells of the lungs.

The next subject of investigation was suspended animation from drowning; and here the experimenters soon found a remarkable difference in the greater rapidity of the death, and the shorter time during which life is recoverable. An animal simply deprived of air for four minutes may recover; but one immersed in water for one minute and a-half is irrecoverably dead. Recovery took place in several cases where the immersion lasted one minute and fifteen seconds; but fifteen seconds more made all the difference. The experimenters proceeded to search into the cause of this peculiarly destructive operation of drowning, as compared with simple privation of air; and very soon they were enabled to trace it to the action of the water itself, forcibly drawn into the lungs by the respiratory struggles of the animal. Two dogs were plunged into water, one having its trachea closed by a stop-cock at the moment of immersion. The dog with the trachea free was taken out in two minutes, irrecoverably dead. The other, with the trachea closed, was taken out at the end of four minutes; the trachea was opened, and in the course of a few seconds the animal began to gasp, and soon recovered. Another mode of diminishing the inspiratory struggles of the animal was by stupefying it with chloroform before immersion in water, and it was actually found that recovery took place after two minutes and fifteen seconds immersion. On this point he (Dr. Williams) adverted to a popular opinion, that it was more difficult to drown a drunken man than one who is sober, as having some foundation on this fact, that insensibility of any kind retards the fatal influence of drowning by diminishing those violent struggles for breath which, by forcing water into the lungs, soon put the case beyond recovery. But nothing so fully pointed out the extent and nature of the fatal influence of water in the lungs as the appearance of these organs in drowned animals as compared with those killed by simple apnœa. In the latter, the air-passages remained free from all secretion or effusion, and the lungs themselves were light and buoyant, and contained remarkably little blood. Now, this is contrary to what is generally described as the state of the lungs

in asphyxia; and probably in ordinary cases, where death is not sudden, but prolonged, more or less engorgement may take place. But here there was no engorgement or obstruction, and it is not wonderful that animals would recover more readily. But with drowned animals not only were all the air-passages choked with frothy fluid, and that fluid generally more or less bloody, but the whole lungs were always highly engorged with blood, so that they were heavy, dark-colored, pitted on pressure, and on being cut, exuded an abundance of blood-tinged fluid, with many air-bubbles in it.

On this subject he would make two remarks, on his own responsibility, apart from his office in the committee. One was, How opposed these observations and conclusions are to those many years ago propounded by Goodwyn, in his treatise on Suspended Animation, whose opinions have generally been adopted to the present time. Goodwyn concluded, from his observations, that water never to a hurtful extent enters the lungs of the drowned, and he depricated the popular practise of hanging up a drowned person by the heels to let the water run out. He (Dr. Williams) was by no means sure that, as Dr. Goodwyn was certainly wrong in his pathology, some modification of the popular practice may not be beneficial.

The other remark related to the mode in which the water which got into the lungs of the drowned proved so rapidly and extensively injurious. No doubt much was due to its mechanical pressure on the tubes and cells, forming an impervious barrier to the readmission of air; but this would not account for the extraordinary increase of blood in the lung, and its transudation into the air-tubes. He believed the injurious influence of water to be due to its chemical power of acting by endosmosis on the blood within the capillaries of the lungs, swelling up and bursting the blood-corpuscles, and causing their rapid accummulation in the organ, and their extravasation into the bronchial tubes. This was a subject for further experimental investigation, and he thought it one of great importance, as bearing on the action of water as a noxious or a therapeutic agent.

He would not detail the various means of resuscitation which were tried by the committee, but the results of the trials were not such as to induce the committee to recommend them strongly for general adoption. Various instructive experiments were made on different modes of performing artificial respiration, and the most conclusive of these had reference to the so-called "ready methods" of Dr. Marshall Hall and Dr. Silvester. One

of their committee (Dr. Sanderson) contrived the apparatus on the table for measuring the air which could be forced out of it into the lungs of a dead body by these methods of artificial respiration; and the general result was, that by Dr. Hall's method the quantity of air moved in and out of the lungs rarely reached nine cubic inches, and never exceeded fifteen; whereas, by Dr. Silvester's plan, an interchange of forty cubic inches was effected; and when this method was further improved by alternating the drawing up of the arms, with depressing them, and with pressure on the lower part of the sternum, the expelled air was as much as fifty cubic inches. So far, then, as these experiments go, they show a great superiority of Dr. Silvester's over Dr. Marshall Hall's "ready method."—*Boston Med. & Sur. Jour.*

ON THE TREATMENT OF TUBERCULAR HEMOPTYSIS.

By Dr. WILLIAM BRINTON, Physician to St. Thomas's Hospital.

Of course, pulmonary hemorrhage has the usual long list of specifics, each of which, in the eyes of its partizans is so efficacious that one can hardly avoid wondering anybody should be so foolish as to die of hemoptysis at all. Alum, turpentine, mercury, the mineral acids, acetate of lead, sulphate of copper, tanic acid and a host of analogous astringents, ipecacuanha, tartar emetic, the external application of ice, figure amongst the favorite remedies of this kind. The variations of diet have been scarcely less striking than those of drugs; the patient who would have been nearly starved twenty years ago to favor coagulation of the blood in the ruptured vessels, being now sometimes crammed with food, and drenched with stimulants, at frequent intervals, in order to "keep up his strength."

Warned by such discrepancies, I think we are justified in regarding as inconclusive what are often termed the "teachings of experience"—namely, the mere events which follow the adoption of this or that drug or dietary in the treatment of the malady. Here, as elsewhere in the study of therapeutics it is our first duty to check the uncertainty or bias which must sometimes beset the conclusions of the most judicial intellect, by a study of the nature and history of the disease, and by the physiological action of the remedy. What *is* hemoptysis, on the one hand? What does the particular drug do to the healthy body, on the other?

Unless we can at least partially answer the first question, it is difficult to see how we can conclude any remedy really useful. Unless you can answer the second, and point to at least an analogy between the effects of the drug in health and in disease, it is nothing short of a very complete and large account of the natural course of the malady that would enable us to accept any recovery as a cure. True it is that quinine cures most forms of ague, and mercury some forms of syphilis, by agencies which are quite inexplicable from the mere physiological effects of either drug respectively. But here our knowledge of the course of the two maladies, unmodified by their respective specifics, proves the reality of the cure. It is not so much a multiplication of coincidences, as an asservation of cause and effect, which is thus afforded us.

Looking back to the variations of hemoptysis already alluded to, and eliminating the casual bleedings of pleurisy, and the more essential, but dilute, hemorrhages of pneumonia, you will remember that we noticed the hemoptysis of pulmonary tubercle as presenting itself in three forms of very different frequency and gravity. The afflux, or active congestion, of the first stage of tubercular deposit, and the obstruction and erosion in the second stage, affect chiefly the smaller vessels of the diseased organ. The large ulceration of the third stage occasionally lays open a bloodvessel of considerable magnitude. The first two are of frequent occurrence; indeed, the second is, in greater or less extent, almost a necessary incident of the malady. The latter is fortunately rare.

Now, of these two commoner varieties of tubercular hemoptysis, it may be unhesitatingly affirmed, that in a very large percentage of their cases the bleeding would cease spontaneously. Indeed, inquiry amongst the poorer classes, who form the outpatients of our hospitals, shows that hemorrhage of this kind commonly ceases in a day or two: not only without medical advice, but often in defiance of the want of that perfect rest and unstimulating diet which, apart from drugs, constitute the best means of favoring its arrest. And I need hardly say that, in such a process, Nature is only stanching an internal bleeding by the same means which she ordinarily employs to arrest an external one; means which, though in the case of these pulmonary vessels they have to fight against additional obstacles in the shape of the alternate suction and compression of breathing, and the agitation of cardiac movement, are yet in the main sufficient.

Hence, to assert that these frequent and scanty hemorrhages generally cease after the administration of any of the above

drugs, is to state a fact which, the moment it is made to sustain an assertion of their specific operancy as stiptics, may be challenged as an instance of the fallacy "*post hoc, ergo propter hoc;*" for the fact is utterly insufficient to sustain any such conclusion. The bleeding may have ceased spontaneously; a recovery which, supposing the instincts of the patient have been allowed full play in the matter of rest and diet, is even additionally explicable. Strictly speaking, the mere coincidence scarcely entitles us to affirm more of stiptic power in the drug than if the bloodvessels concerned had been those of a cut finger.

In all cases of hemoptysis, the first indication of treatment is suggested by the pathology of these, and indeed most other, morbid hemorrhages. That the bleeding is generally preceded and accompanied by great congestion of the bloodvessels nearest the lesion is a fact about which there can be no doubt whatever. And that the removal of this condition can often be effected by smart aperients is another fact which may be as unhesitatingly asserted. Nowhere are these statements better verified than in the digestive canal; where, for example, you may sometimes see in the submucous areolar tissue that the nodule of deposit which has excited a copious hemorrhage, is surrounded by an inch or two of deep velvety congestion, with a well-defined margin towards the neighboring healthy structures; and where the virtues of drastic purgatives in melæna constitute an experience as old as the days of Hippocrates. And all the purgatives which one may give with this purpose, the old-fashioned dose of blue-pill or calomel, followed by a black draught, seems really the quickest and most efficacious. Under all ordinary circumstances its administration, and, if needful, repetition, should be a prominent feature of the treatment.

Then as to the drugs for checking hemorrhage, by their astringency or otherwise. There seems to be a kind of notion in the minds of some therapeutical writers, that such drugs as turpentine, alum, gallic acid, acetate of lead, sesquichloride of iron, etc., etc., when taken into the stomach, are received into the blood in quantities sufficient to communicate to this fluid those styptic properties which they undoubtedly possess when applied to an external wound, or to a bleeding stomach, or perhaps (through the urine) to a bleeding bladder. But I know of nothing to confirm such a notion. And I think that those who would look the facts of therapeutics sturdily in the face (which, not wishing to die a homœopath, I intend to do), would scarcely think twice about the matter. At any rate experiment would soon afford some analogical answer. Stir up 10 grains of gallic acid,

or 10 minims of tincture of sesquichloride of iron, in 10 or 20 pints of blood, and I think the resulting solution would be a styptic of a somewhat Hahnemannic degree of diluteness; not nearly so potent, one may anticipate, as the compound tincture of benzoin which, forty years ago, was the favorite application of some old-fashioned country surgeons to stanch the bleeding of a superficial wound, and which, in its turn, modern surgeons have practically superseded by a little patience and cold water.

Of other remedies for hemoptysis one may speak more respectfully, though with some qualifications. Ice, for example, seems occasionally of service. But the internal congestion, invariably produced by great external cold, suggests that, save where the source of the hemorrhage is near enough to the surface to be directly affected by it, its benefits may be more than questionable. And of ipecacuanha, which many excellent authorities think highly of, in small and frequent doses, (a grain every ten or fifteen minutes,) I can only say that I have known its use followed by great exhaustion and nausea, and a very protracted convalescence, but, (what is more to the purpose,) that over and over again I have known it utterly fail in any degree to moderate such a hemorrhage.

In short, all else that I have to say of such remedies might almost be summed up in the statement, that it is in the terrible hemorrhage of larger eroded vessels, and therefore of what is often advanced phthisis, that we have the most searching test of the value of any drug of this kind. Presuming we have such a means, we must very frequently use it; for it is often impossible to tell beforehand whether a slight oozing is not the commencement of a more considerable hemorrhage, such as (directly or indirectly) endangers life. And I believe that we have such a remedy, for the majority of patients, in *digitalis*.

The grounds for the strong personal conviction I find chiefly in the fact, that I have repeatedly seen profuse and alarming hemoptysis, which had resisted many other means of treatment, including a most judicious diet, and all the other drugs above enumerated, yield to this active remedy, given so as to produce its well known specific effects on the pulse. And not only so, but, in several cases, the interruption of the drug seems to have permitted the return of the hemorrhage, to be again arrested by the resumption of the digitalis. Our patient in bed No. 9, of Jacob's ward, so far illustrates this point as that, thrice over, the gradual disuse of the digitalis, at intervals of two and three weeks from the previous cessation of the hemoptysis under the use of the drug, has been followed by fresh attacks. And the

very same physiological effects which confirm the efficacy of digitalis may suggest the details and qualifications of its use. Pray remember that it is too much of an edged tool to be carelessly handled; and hence that, if you cannot or will not take the trouble to watch over its administration, you had best not give it at all. From thirty to ninety minims of the officinal tincture daily, in four or six doses, is as much as is generally requisite; and, (as has been pointed out by Sir Henry Holland, in that chapter of his classical work devoted to the consideration of this drug,) it is often not the robust, strong man who bears or demands the largest dose. Keep the patient quiet, and in the recumbent posture—an attitude for which the drug is a double argument in this malady. Judge, by repeated enquiry, how far, or how quickly, the digitalis is acting on the pulse; and, as a rule, reduce the dose as soon as the pulse has dropped to the slow rate, (30 to 50 or 60 per minute,) which is the usual result of its action both in health and in disease. Lastly, for those who like polypharmacy, the drug combines well enough with dilute sulphuric acid during the attack, and with sesquichloride of iron during the convalescence, without substantial detriment to its own much greater virtues.—*Lancet, Nov.* 30, 1861, *p.* 516; *Braithwaite's Retrospect.*

CLINICAL REMARKS ON SYMPATHETIC INFLAMMATION OF THE EYEBALL, ITS DANGER, AND THE MEANS OF ARRESTING IT.

Made at the Central London Ophthalmic Hospital.

By HAYNES WALTON, Surgeon to the Hospital.

The subject is among those in this department of medicine that modern observation has thoroughly recognized, and investigation and rational experiment have found a remedy for. Sympathetic inflammation, or sympathetic ophthalmitis, may arise out of any circumstances that produce disorganization of the eyeball. It is most commonly, however, seen when an eye has been spoiled by wounds. This is the usual course of things. An eye is wounded, perhaps severely, and the lens has escaped, or a portion of the vitreous humour; or, perhaps, the cornea only has been penetrated, and the iris, or the lens wounded. The acute and primary inflammatory attack is subdued, and chronic disease supervenes. The heretofore sound eye gets intolerant to light, the first common result; impaired vision in

some form is the next bad omen. Loss of focal adjustment, incapability of sustaining vision on minute objects, loss of definition (generally called feeble sight), muscæ, spectra, flashes, stars, inflammatory action, loss of pupillary movements, change of iris color, softening of the eyeball, and shrinking, are the later manifestations. Thus it would seem that the morbid action travels from the retina forwards. Ultimately, all the ocular tissues are involved, and atrophy ensues. There may be varieties in the subjective and objective symptoms; and there may be no pain, or it may exist with great severity.

The sympathetic action is imminent, so long as any irritation produced by the traumatic disease lingers, so that it may be developed in a few weeks, or not for years. It cannot be said that any peculiar form of wound, or the injury of any particular tissue, excites that kind of action which develops the sympathy; as blows without breach of surface, or chemical injuries, may cause it.

Inflammatory affections producing disorganization of the eye may induce sympathetic disease. I have seen the greater number of cases arising from staphyloma of the cornea and the sclerotica—that is, general enlargement of the eyeball—the result of purulent ophthalmia in infancy, than any other cause.

The diagnosis is by no means obscure, and in traumatic cases it is most easy. The eye primarily injured or diseased, always manifests symptoms of irritation or disturbance; and their is evidence of acute or chronic inflammation. These may be slight; but they are to be discerned with care. There is always soreness under touch. So far as I know, vision is invariably extinct. If, then, a patient who has lost an eye from accident or disease, were to apply to me on account of the eye heretofore well, but now attacked with any of the symptoms that I have pointed out of sympathetic derangement, I should examine the eye primarily injured; and if I discovered any morbid action in progress, any of those states which are connected with, or arise out of, what is called inflammation, I should say that I had before me a case of sympathetic ophthalmitis.

There are two errors into which you may fall, but they are easily avoided when you are on your guard. Do not, then, mistake for sympathy what is merely the same disease that has appeared in the one eye, and is secondary only in the order of time. Remember that the destruction of one eye, from any cause, may be followed, although the occurrence is not common, by the loss of the power of the retina in the other, and this without the least trace of any active symptom in that which was

hurt. Precisely the same thing may occur after the one eyeball has collapsed, or has even been extirpated, so that sympathetic inflammation can have nothing to do with it.

The treatment is definite and sure; but is not to be found in general remedies, local applications, nor any dietary system. Nothing of the kind can be depended on; the affection can be stopped, or subdued, only by surgical treatment. A portion of the originally diseased eyeball must be removed, whereby the products that have set up the irritation, or the cretaceous, or ossified tissue, which has acted as a foreign body, may be got rid of; or extirpation resorted to. The practice works wonders when done early. If adopted before the sympathetic action has induced palpable structural charges, it will be all effectual. At later stages it may arrest progress, and stay the destruction. Even when the pupil has become adherent to the capsule of the lens, and the iris dull, I have known a check.

As a rule, the removal of a portion of the eyeball, "abscission," is adapted to those cases in which the eye has been wounded in the front part, and the abnormal changes limited to that portion of the organ. When the whole eyeball evidently is diseased, and especially when there is distension of the sclerotic coat, or general enlargement, "extirpation" is the more adapted.

I perform abscission in this manner. The eyelids having been retracted, I transfix the cornea, or whatever remains of it, or the staphyloma, if there be one, with an ordinary tenaculum, and cut it off with a long and narrow scalpel, gently and quickly. It may be necessary to make the amputation a little behind the cornea, and then the iris, or whatever remains of it, is taken away. When the lens is present, whether opaque or not, it ought to be removed. An attempt should be made by gently manipulating and rapid closing of the eyelids, to save as much as possible of the vitreous humour. I now place a ball of cotton wool or a pledget of lint quickly over the eyelids, maintain it with a bandage, and keep the eye so bound for two or three days. Afterwards, I apply strips of plaster. There is no more important part in the proceeding than this, without which being properly done there may be troublesome bleeding and long convalescence. Healing is effected by the cicatrizing of the surface, and its rapidity depends on the healthiness of the vitreous humour. Among the advantages of "abscission," may be mentioned that it admits of the most perfect adaptation of an artificial eye. This is through the stump that is left.

"Extirpation" should be done within the "ocular sheath" of

the eyeball. For much that is interesting with regard to this sheath or tissue, of which the existence was only made out a few years ago by Dr. O'Ferrall, of Dublin, I beg to refer you to my work on the *Surgical Diseases of the Eye*, second edition. This operation would be called a more brilliant one than "abscission;" and there can be no doubt that, although the proceeding, so far as the practial surgery is concerned, is more prolonged and severe, the recovery may be more rapid, and the general effect on the system perhaps less. Yet I am quite sure that if the patient's ultimate welfare be considered, its adoption should be the rare exception.

I consider this to be the best manner of doing the extirpation. The eyelids having been separated by the silver wire retractor, the conjunctiva is dissected off with forceps and scissors close to its ocular attachment; the recti and oblique muscles then taken up severally with the hook, as in the operation for strabismus, and divided at their insertions; the sheath detached by a probe or hook, from the eyeball, which should now be drawn aside, and the optic nerve cut through. There is generally no bleeding; but should it occur, a compress and bandage must be employed. —*British Med. Journal.*

SOME OF THE EFFECTS OF TOBACCO.

By P. J. FARNSWORTH, M.D., Lyons, Iowa.

Mr. L., aged 35, a plasterer by trade, called at my office Dec. 12, 1861, complaining of sore throat, together with partial anæsthesia of his fingers, toes, and end of his tongue. According to the statement he made to me, he had always been regular and temperate in his habits. He had a wife and four children. He was rather thin, and the noticeable feature about him was a partial anæmic or cachectic look. His appetite was good. As the numbness was not troublesome I thought it might be temporary, and did not at that time attempt any treatment. There was redness of the fauces, and a slight enlargement of the tonsils, for which I used a topical application of a weak solution of nitrate of silver. Dec. 20th, he came again to the office for another application to the throat, complaining still more of numbness. I was then led to make a more careful examination of his case, with a view to find some definate cause for these nervous phenomena. I could find no tenderness either superficial or deep-seated. He had never been troubled with headache,

had had no pain in the lumbar region. There was something in his look that suggested Bright's disease, and I accordingly examined the urine rigidly, but found nothing abnormal. I gave him some simple bitters, with a preparation of iron, and a blister to apply to the spine, between the shoulders, commencing the treatment with a dose of compound cathartic pills.

Jan. 1st, 1862, L. was brought to the office, having previously been able to walk (the distance of five miles). Now the ride was too much for his strength. The numbness was increasing, his appetite was somewhat inordinate, and the tendency to constipation, which previously existed, had increased; he had lost flesh. I again examined the urine without detecting anything. Thinking it might be a miasmatic poisoning, ordered three grains of quinine three times a day, together with a laxative pill to be taken every night. On the 12th of January I was sent for, as his strength had failed, and he was confined to the house. At this time I asked a neighboring practitioner to visit him in consultation. The numbness now seemed pretty general; his eyesight was somewhat affected. The heart beat somewhat irregularly, with a slight anæmic murmur. The tongue was slightly coated. The generative organs were participating in the general weakness; had no erections or sexual desires. Gave him tinct. fer. mur. gutt. x. three times a day, and agreed to the reapplication of the blister to the spine.

I called Jan. 15th, and found the patient in bed, very much dejected, and *smoking*. Having heard us discuss the propriety of blistering, he had applied the blisters to the whole spine, and to the hips. He felt them but little, and was scarcely conscious of their presence, but they had produced an immense drain on the system, and he had failed very fast. I questioned him now about his smoking, and found that he had considered it so small a matter as not to mention it, but that for several years he had smoked the coarsest kind of tobacco in the foulest kind of a pipe, during all his waking hours. On further examination into his case, I was convinced that it was one of poisoning by nicotine. The want of feeling was now general; the motor powers were active enough; he could hold his knife in his hand firmly when his eyes were directly on it, but if he looked away the knife dropped. He walked with difficulty, because he must needs look where his feet fell, as he could not feel them touch the ground. I advised him to stop his smoking at once, and ordered an ounce of brandy and potass. iod. gr. v. three times a day, friction to the surface, and a Dover's powder at night, as he had become very wakeful.

On the third day after I found the patient somewhat improved, but now alarmed at the quantity and quality of his urine; it was very highly charged with a red sediment, which proved to be urea, urate of ammonia, and triple phosphates; with a distinct odor of nicotine. The Dover's powder acted as a diaphoretic, conjoined with the friction; and he complained of a fetid sweat. His wife said that now he had discarded the pipe, the fumes of it were exuding through his skin. Continued the brandy and the potass iod. and gave him tinct. fer. mur. gutt. xx. three times a day. On the 22d inst., I found the patient improving, the urine becoming more natural, but the perspiration was profuse at night, having the same nicotine odor. Sensibility did not return as fast as the strength; he was obliged to use his reason about cold and heat, and in regard to taking food. Cold was scarcely felt, and but little taste was left. Even his exercise had to be regulated by his judgment, and not by his feelings. I continued the tinct. fer. mur. and the potass iod., giving an occasional dose of sulph. magnesia, to move the bowels.

Jan. 29.—The patient still improving, the numbness going of in the same manner that it had come on—passing downwards towards the extremities. I continued the iron, ordered a nourishing diet, the bathing every evening with friction, and an occasional Dover powder.

From that time until March he continued to improve, the numbness having passed to the ends of the fingers and toes, and the end of the tongue. He was then able to walk the five miles to see me; the waxy look had passed off; and the look of health returned. At this time, for experiment sake, he tried to smoke a cigar. It produced nausea and all the feelings that tobacco does to a novice; together with a return of the numbness of the fingers, and a smarting of the fauces.

I consider this as an illustration of the effects of the slow introduction of tobacco poison into the system. I have been unable to find any such effect ascribed to it in any work I have at hand. Dr. Prout, quoted by Pereira, says, "It disorders the assimilating functions in general; but particularly, as I believe, the assimilation, of the saccharine principle. I have never indeed been able to trace the development of oxalic acid to the use of tobacco; but that some analogous and equally poisonous principle (probably of an acid nature) is generated in certain individuals by its abuse, is evident from the cachectic looks, and from the darkened, often greenish-yellow tint of their blood."

Pereira says, "I am not acquainted with any well ascertained ill effects resulting from the habitual use of smoking."

He is probably a lover of the "weed" himself, or had not made close observation of the smokers around him, for it is my opinion that scarcely one in five but that is injured by tobacco. It acts as a nervous sedative or depressant, causing an exhausted feeling at the stomach, and I have good reason to suppose that smoking is the great cause of the universal dyspepsia with which we are troubled.

It sometimes produces tremor of the nerves, and in many cases, instead of being a temporary sedative, destroys the tone of the nerves and produces languor and fretfulness, and often effects like those above described, though not in every case in so marked a degree. In a majority of smokers and chewers of tobacco, it acts like a violent poison, which it is, introduced slowly.—*Amer. Medical Times.*

THE OBSTETRIC BAG.

A DESCRIPTION OF THE

INSTRUMENTS USED IN OPERATIVE MIDWIFERY.

A Lecture delivered in St. Thomas's Hospital,

By ROBERT BARNES, M.D.,

Fellow of the Royal College of Physicians, Physician to the Royal Maternity Charity, Lecturer on Midwifery at St. Thomas's Hospital.

Gentlemen: — Before demonstrating the operations which you may be called upon to perform in the practice of midwifery, it will be useful to describe the instruments with which those operations are performed. In no department of surgery is there a greater variety, or a more embarrassing confusion of instruments, than in midwifery. I imagine it is this very confusion, as much as the ambition of appearing original, that has driven many practitioners to devise fresh instruments for their own use. Thus has confusion been worse confounded; and not seldom have men unwitting committed the blunder of inventing over again an instrument which had long been known to others.

The International Exhibition will give you some faint idea of the extent of the modern obstetric armamentarium. An inspection of the surgical instruments sent by the principal makers of Europe may be recommended to every student and practitioner. The observer will be struck, perhaps, at first with the multiplicity of the means contrived for the accomplishment of the same

end. But a more analytical study will suggest to him the further reflection that in this multiplicity of forms of instruments bearing the same names there may lie a deeper purpose and a more instructive lesson. The greater number of the modifications made in the forceps, for example, reveal successive attempts to overcome some difficulty in practice, or even to extend the applications and increase the usefulness of this admirable instrument. You will, again, be led by the examination of the instruments, which are the visible expression of the thoughts of their designers, to inquire into the peculiarities and doctrines of different practioners and of various schools. It is curious to observe how closely certain primary types of instruments have been preserved in different countries. The straight forceps, with the short handles of Chamberlen, reappears it its essential characters in the instrument of Chapman, Smellie, Denman, and other English teachers; and even cherished by some at the present day. In France, the latest modifications of Dubois and Pajot still bear a striking resemblance to the long forceps with double curve and long handles of Levret. The forceps by birthright is an English instrument. But it has not been simply naturalized in France. Our continental brethren have impressed upon it a new idea, and made it capable of accomplishing much more than the old English model could do. Then, again, you will see the instruments in the foreign cases which are altogether unknown to English practice—instruments which are not to be procured from our best cutlers at home. There is for example, the cephalotribe, for crushing down the head to dimensions that will admit of dragging through a greatly contracted pelvis. You may think it singular that this powerful and formidable weapon should be needed abroad, and that it should not have been found necessary here. You will turn to the instruments used in England to overcome those difficulties which, on the continent generally, are encountered by other means. This comparative study will, in this and many other ways, prove exceedingly interesting and instructive. I cannot enter into it fully now, as my immediate duty is to explain to you the construction and uses of the several pieces of such a selection of instruments as I have found to be best adapted for the exigences of practice.

And first of all I would say a few words about that most essential and most universally applicable obstetric instrument, the human hand. In ordinary labor of course it is the only instrument required; but it is also the sole instrument called for in many of the greatest difficulties that occur in obstetric practice. In malpresentations—in many cases of contracted or deformed

pelvis—in not a few cases where, after craniotomy, the crotchet and craniotomy forceps have failed to deliver—the bare hand affords a safe and ready extrication.

I believe that if manual dexterity were more cultivated than it is, lives that are now lost would be saved, and certainly many tedious and dangerous instrumental operations would be avoided. It would be both instructive and curious to carry our minds back to the days when the forceps and other obstetric instruments were unknown, and to confront the problem which our predecessors—such men as Ambroise, Pare, Guillemeau, and others—had to solve: namely, how to deliver a woman with a deformed pelvis without instruments. That they did accomplish in many instances with the unarmed hand what we now do by the aid of various weapons there can be no doubt. If this implies greater poverty of resources on their part, it not the less implies also greater manual skill. I am confident that the possession of instruments, especially of the craniotomy instruments, has led within the last century, to a neglect of the proper uses of the hands, which is much to be deplored. Indeed, it may be said that the more certain instruments are perfected, the more they will be trusted and resorted to, until we are in danger of greatly exaggerating their value. The question is not merely one of choice between two methods of obtaining the same end; it is frequently one between life and death. The perforator and crotchet for example, kill the child, where the hand would sometimes save it, and that without adding to the mother's risk. I say it deliberately, after no mean experience in obstetric operations, that what is most wanted at the present day is not the improvement or invention of instruments, but a more careful and scientific cultivation of the powers of the hand, and a judicious selection of the best models of existing instruments.

Obstetric surgery has this peculiarity: its operations are carried on in the dark, our only guide being the information conveyed by the sense of touch. The mind's eye travels on the fingers' ends. The hand thus possesses an inestimable superiority over all over instruments. Its every movement is regulated by consciousness. If used with ordinary discretion and skill, it can hardly inflict injury.

After expending a world of ingenuity upon the invention and perfecting of obstetric instruments, it is time to ascend a little the stream of knowledge, and to endeavor to recover from the teaching of our forefathers their secret of *chirurgery;* to regain, if not to extend, that power over the great instrument which is

the surgeon's most trusty aid, and from which he derives his name.

In providing yourselves with a set of instruments, I would recommend you to discard the old rolling up leathern case, or *trousseau.* It is an inconvenient contrivance. It only carries a restricted number of things. I find a modification of the travelling leather bag far more useful. It will carry not only the selected instruments ordinarily required, but you can always put anything else in it that may be specially indicated. It will hold bottles; serve to bring away pathological specimens. In short, it makes a perfect accoucheur's vade-mecum. And if you turn out the obstetric furniture, you have a traveling bag again. The following is a list of the ordinary furniture of the Obstetric Bag:—

1. A pair of long double-curved forceps.
2. A craniotome, or perforator.
3. A crotchet.
4. A craniotomy forceps.
5. A blunt-ended straight bistoury, with a cutting edge of three-quarters of an inch, to incise the os uteri in cases of extreme contraction or cicatrization.
6. A Higginson's syringe, fitted on my plan, with a long uterine tube, which serves for the injection of iced water, etc., to arrest hæmorrhage, and also serves to expand.
7. A set of my caoutchouc uterine dilators, for the induction of premature labor, and the acceleration of labor, as in cases of placenta prævia, convulsions, etc.
8. A flexable male catheter. (The short silver female catheter is often useless, and is generally less convenient than the flexable male catheter.)
9. A pair of scissors.
10. Thread.
11. Some yards of tape.

Medicines.

1. Chloroform and inhaler.
2. Laudanum.
3. Hofman's anodyne.
4. Ergot of Rye.
5. A solution of perchloride of iron.

The medicines can be fitted in small pockets at the upper part of the bag.

These are the things always kept in my bag ready for use. If you should want anything else, the bag will hold it.

I will now say a few words in explanation of the construction and uses of some of the instruments enumerated:

The Forceps.—Next to a skilful hand, the possession of a good forceps is of the greatest importance to the practitioner of midwifery. A good forceps is in many cases a substitute for the perforator; and in many others it may save the mother hours of torture, and the dangers that attend upon protracted labor. Those who restrict themselves to the use of the short forceps, or even to a long forceps with the single or cranial curve, must inevitably expose many patients to the dangers of flooding, of convulsions, of protracted labor, of jamming the lower segment of the uterus between the child's head and the sharp pelvic brim; or, to obviatd these perils to the mother, they must sacrifice her child. Every one will grant that craniotomy is the confession of the impotency of our art to save. It ought to be regarded as the last resource. Every effort should be made to improve these instruments and operations which obviate the necessity of resorting to this cruel alternative of destroying the child. The success of these saving operations often, indeed, depends upon good instruments being skilfully employed. Without indulging in the flattering hope that craniotomy will ever be exploded, still I do think that the degree to which this brutal operation shall be minimized must be accepted as a measure of the improvement of obstetric surgery. The great agent of this reduction must be the forceps. And to answer the indications fully, this instrument must be of sufficient length and properly curved to reach the head arrested on the brim of the pelvis, and of sufficient power to arrest some compressive action upon the fœtal head to bring it through a moderately contracted space. If you will look at the French forceps, you will understand how it is that in France craniotomy is so rare, and why they pass at once from the forceps to the cephalotribe—an instrument so formidable that it seems only adapted for the most extreme cases of disproportion. Do they never witness abroad those minor degrees of disproportion in which, here, craniotomy is resorted to? Certainly such cases must and do occur. The inference we must draw is, that the forceps is made to do the work of the perforator; that by means of this instrument our brethren in France are enabled to rescue from the perforator a large class of intermediate cases ranging between the normal proportions and the extreme disproportions which call for the cephalotribe or the Cæsarean section.

The French forceps, with its powerful blades and long handles, present a formidable appearance to eyes accustomed to the small, single-handed forceps of this country. If, however, I should ever be tempted to lay aside an instrument which has

served me well on many occasions, it will probably be to take up the improved forceps of Dubois or that of Pajot. The great bugbear of English operative midwifery is the absurd dread of possessing powerful instruments. Thus the blades of the forceps are made straight and short; the lock is placed close to the bow of the blades, and the handles are so short that they can only be grasped with one hand—all to carry out the idea that to make a safe instrument, it must be weak or powerless. There is no greater error than this. In the first place, a weak instrument is, by the mere fact of its weakness, restricted to a very limited class of cases. In the second place, if the instrument is weak, it calls for more muscular force on the part of the operator. Now, it is sometimes necessary to keep up a considerable degree of force for some time, and not seldom in a constrained position. Fatigue follows; the operator's muscles become unsteady; the hand loses its nicety of diagnostic touch, and that exactly balanced control over its movements which it is so important to preserve. Under these circumstances, he soon comes to the conclusion that he has used all the force that is justifiable; that the case is not fitted for the forceps, and takes up the horrid perforator; or he runs the risk of doing that mischief to avoid which his forceps was made weak. It is a transparent fallacy to conclude that an instrument is dangerous because it is powerful. If you have an excess of power, your need not use it; certainly you need not abuse it. Would it not be ridiculous to bring down the power of a man to the puny, unsteady strength of a boy, when there is work requiring power and skill to be done? Having force to spare, it is more easy to regulate the amount of force you employ; you gain more perfect command over your instrument; you need never exhaust your own muscular power. The golden rule in midwifery, as in all other affairs, is never to expend unnecessary force. The steam-hammer will strike with a force of many tons when its duty is to weld bars of iron into one mass; but when called upon to crack a nut, it will just break the shell without bruising the kernel. So in obstetric operations you will so exactly graduate the force at your disposal as to effect your purpose and nothing more. This faculty of accurate graduation depends, I repeat, upon having a reserve of force. Violence is the fault of struggling feebleness, not of conscious power. Moderation must emanate from the will of the operator; it must not be looked for from the imperfection of his instruments. One of the most valuable features of the French forceps is the length of the handles, which admits of grasping by both hands at once. It does not follow that, because of this

facility, you are to throw the whole strength of both arms into the work of compression and extraction. The true use of a two-handled instrument is to enable one hand to assist, to relieve, to steady the other. By alternate action, the hands get rest, the muscles preserve their tone, and that accurate sense of resistance which is necessary to guide the surgeon in measuring the degree of force that is called for, or to warn him when to desist. The instrument I now show you, which I have used exclusively for several years, although less powerful than the French forceps, answers similar indications. It is, as I believe, as regards the form of the blades, the forceps of Mr. Roberton, of Manchester; but instrument-makers tell me that my instrument is different in other respects. The blades are double-curved, but both the pelvic and the cranial curves are slight; the length of the arc of the cranial bow is seven inches, thus adapting it to that elongation of the fœtal cranium which is commonly the result of slight pelvic contraction and protracted labor; then there is a straight shank an inch and a-half long, and a semicircular bow, the arc or diameter of which is also an inch and a-half long. This half circle in each blade, when opposed to its fellow, makes a ring. This ring is immediately in front of the lock. The lock is the commencement of the handles, which are four inches and a-quarter long. The handles might be lengthened with advantage. The straight shank and the ring make together a length of three inches between the springing of the bow and the lock. This effectually clears the lock from all risk of entanglement with the labia or perineum. The ring offers a most convenient hold for the forefinger, whilst the handle can be grasped either with the remainder of the same hand, or with the other hand. You have thus essentially a two-handed instrument, which can be worked with great nicety and economy of muscular force. This forceps is equally adapted for arrest at the brim, in the cavity, or near the outlet of the pelvis. It is quite superfluous to encumber yourselves with more than one instrument. If you consider that this forceps is made to seize a head above the brim, and to bring it down through the entire pelvic canal, you will see that it is of necessity fitted for application at any lower point of the pelvis. There are two more practical advantages possessed by this instrument: it adds nothing whatever to the risk of laceration to the perineum—a risk which is very serious with the straight forceps; owing to the pelvic curve, the upper or right blade can be introduced without dragging the patient's nates out of bed, or over the edge. The application of the instrument, indeed, requires very little disturbance of the patient.

You thus avoid inflicting that terror which attends troublesome preparations. I have saved many children with this forceps, who had been otherwise doomed to perish by craniotomy. I have never seen injury inflicted by it upon the mother, as I have seen by the short forceps even in skilful hands. I entertain a confident opinion that the short straight forceps is destined to disappear from obstetric practice.

The Craniotomy Instruments.—Many perforators and craniotomy-forceps employed are very defective. The perforators will not perforate, and the forceps will not hold. The point of the perforator should be straight. To curve the point is to throw the force out of its proper line. The shank should be long, not less than seven inches, to enable the point to reach above the brim of the pelvis, whilst the handles are clear of the external parts. The shanks should diverge well, so as to admit the entire hand between the handles. Here, again, you will find the advantage of power in the instrument. It is the surest safeguard against slipping, against failure, against injuring the mother. This form of instrument was recommended to me by Dr. Oldham. It answers its purpose thoroughly. The best crotchet is that used in the Dublin Lying-in Hospital. I think that extraction by the craniotomy-forceps is generally preferable; but then you must have a good forceps. I can understand that having to choose between a good crotchet and a bad craniotomy-forceps the preference should be given to the former. The craniotomy-forceps I show you is an excellent and powerful instrument. It is a modification made by Messrs. Weiss, under my direction of the instruments of Professors Simpson and Murphy. The blades can either be introduced singly or as one instrument; but, in truth, this forceps is very rarely called for. In the first place, craniotomy ought to be rare; and, in the second place, I have often found it far more easy and expeditious to deliver a child after perforation by turning than by the crotchet or forceps.

What I have said to-day is for the express purpose of assisting in the selection of a good set of obstetric instruments. I am sure I have more frequently seen practitioners fail in operations they have undertaken from want of good models of instruments than from want of skill. Hence the importance I attach to this point. The mode of using the instrument I shall demonstrate hereafter.—*London Lancet.*

Editorial.

MEDICAL DEPARTMENT OF LIND UNIVERSITY.

The regular annual course of lectures in this Institution commenced on Monday evening, Oct. 13, 1862, with a general introductory lecture, by Prof. R. N. ISHAM. The lecture room was well filled with an appreciative audience, who listened to the lecture with much interest and pleasure. The lecture was well written, its sentiments strictly appropriate to the occasion, and well calculated to impress the mind of the student with a proper appreciation of the importance of his undertaking, and to inspire him with a laudable ambition to make himself an honor to the profession and a blessing to the community. At the close of the lecture, Prof. JOHNSON, president of the Faculty, explained such changes as had been made necessary on account of the continued absence of one or two members as surgeons in the army. The full course on general pathology and public hygiene will be given by Dr. WING, one the members of the State Board of Medical Examiners, a true gentleman, a ripe scholar, and fully competent to do justice to the task he has undertaken. DAVID RUTTER, M.D., emeritus professor of obstetrics, will add to the interest in the department of midwifery and diseases of females, by giving one lecture per week throughout the term. In addition to the four regular clinics in the Mercy Hospital and two in the College Dispensary, Prof. ISHAM will give a full clinical course on syphilis and syphilitic diseases in the Marine Hospital, occupying every Saturday morning. The following is the complete programme for the present College term:—

JUNIOR COURSE.

	MONDAY.	TUESDAY.	WED'SDAY.	THURSDAY.	FRIDAY.	SATURDAY.
9 A.M.	Johnson,	Johnson,	Johnson,	Johnson,	Johnson,	
10 A.M.	Wing,	Wing,	Wing,	Mahla,	Mahla,	
11 A.M.	Hollister,	Hollister,	Hollister,	Hollister,	Hollister,	Mahla.
12 M.	Jewell,	Jewell,	Jewell,	Jewell,	Jewell,	

SENIOR COURSE.

	MONDAY.	TUESDAY.	WED'SDAY.	THURSDAY.	FRIDAY.	SATURDAY.
2 P.M.	Byford,	Byford,	Clinic,	Byford,	Byford,	Clinic.
3 P.M.	Isham,	Isham,	Isham,	Isham,	Isham,	
4 P.M.	Mahla,	Mahla,	Mahla,	Rutter,	Spafford,	
5 P.M.	Davis,	Davis,	Davis,	Davis,	Davis,	

Mercy Hospital Clinic, 8 A. M. Monday, Tuesday, Thursday, and Friday.
Marine " " 8 A. M. Saturday.
College, " " 2 P. M. Wednesday and Saturday.

"Is Alcohol Food?"—We find in a recent number of the *London Lancet*, a summary or abstract of a paper read at the Annual Meeting of the British Medical Association, Aug. 8th, 1862; by Thomas Inman, M.D., Physician to the Liverpool Royal Infirmary, on the above subject. The following are the conclusions of the author:—

1. Nature has provided in the salivary glands, the liver, and the lungs of every mammal an apparatus for converting all food, especially farinaceous, into alcohol; and we have no evidence that such conversion does not take place.

2. One form of alcohol or another is available for the support of life, and for restoration to health when no ordinary food can be or is digested.

3. Alcohol, after being taken, is incorporated with the blood, passes into the various tissues, and ultimately disappears, a small portion only passing away in the breath. We can say no more of bread, potatoes, or oatmeal porridge, a small portion of each of which passes out of the body with the fæces.

4. Alcohol, in the form of ale, porter, wine, etc., relieves hunger and quenches thirst simultaneously, and with a completeness that is not equalled by water, infusion of gentian, cayenne pepper, or by turpentine—*i. e.*, it does not act as water simply, or as a stimulant alone.

5. Wine, beer, etc., satisfy the appetite when taken alone, and act for the time as any solid food would do.

6. When alcohol is mingled with other food, a less amount of the latter suffices for the wants of the system than if water had been used as the drink.

7. The various forms in which alcohol is taken have as marked and specific effects as have animal and vegetable articles of diet.

8. Individuals have subsisted wholly upon one or the other of the various forms of alcohol in common use for periods of great

length; and as it is illogical to conclude that they must have lived on air, without food, or on flies, like chameleons, the conclusion is irresistible.

What that conclusion is, it might be left for every thinking man to decide.

In regard to the first of these propositions, we find nothing in the paper or elsewhere to show why the author might not have said with equal propriety that, "Nature has provided in the salivary glands, the liver, and the lungs of every mammal an apparatus for converting all food, especially farinaceous, into" *soap* or *vinegar* as into "alcohol." It seems to be a simple assertion without the slightest positive proof for its support.

Neither is the negative assertion made in the closing sentence of the proposition true; for we have evidence in abundance, that no such conversion of food into alcohol ever takes place in the healthy state of the animal economy.

1st. The numerous rigid and elaborate analysis of healthy blood, made by different chemists, have entirely failed to detect any such substance as alcohol in that fluid, whether arterial or venous.

2d. There is nothing in the known composition or properties of the fluids furnished by the salivary glands, the liver, or the lungs calculated to produce vinous fermentation.

3d. The eating of any quantity of the *ferinaceous* food has never been known to produce any of the peculiar exhilerating effects of alcohol. Did Dr. INMAN ever see a man intoxicated from drinking simple syrup, or eating any quantity of sugar, starch, or gum?—And yet if "nature" has provided the digestive and pulmonary organs "for converting all food, *especially farinaceous, into alcohol,*" why does not the son of Erin get just as *tipsy* at a suitable time after a breakfast of potatoes, as after a glass of whiskey?—The second and third propositions contain nothing that might not be said with equal propriety of any other valuable medicinal agent.

The intimation that only a small part of the alcohol taken, is ever eliminated from the system unchanged, though disproved by the recent experiments of LALLEMAND and others, yet if it

was true, affords no proof that the retained alcohol acts as food for nourishing the tissues.

Opium, mercury, arsenic, etc., are also taken into the blood, and pass into the various tissues, and no one has yet demonstrated that all of these substances reappear unchanged in any of the secretions. But shall we therefore conclude that opium, mercury, and arsenic are equivalent to food?

Such a conclusion would be just as logical and philosophical as that involved in the third proposition of the author.

The assertion in the fourth proposition that "ale, porter, wine, etc., relieve hunger and quench thirst simultaneously, and with a completeness that is not equalled by water, is partly true and partly false. It is true that the addition of alcohol to the water will relieve the sense of hunger more than clear water; and so will opium, ether, chloroform, or any other agent capable of producing an anodyne or anesthetic effect on the nervous system. But that it will quench thirst more perfectly or for a longer period than pure water is contradicted by every day's observation; for certainly there is no class of persons who call for drink more frequently or more urgently than those who drink fermented or distilled liquors.

The fifth, sixth, and seventh propositions are of the same vague and unsatisfactory character as the preceding.

The assertion in the eighth proposition, that "Individuals have subsisted wholly upon one or other of the various forms of alcohol in common use, for periods of great length;" leaving it as a necessary inference that it must consequently have acted as food, is altogether unsatisfactory. How long does the author mean by "periods of great length?" Is it three weeks, three months, or three years? Again, "one or other of the various forms of alcohol in common use," is rather indefinite.

It is well known that most of the fermented drinks as they are commonly used, contain a small quantity of matter capable of acting as nourishment aside from the alcohol. Hence, if an individual supplied with those drinks should live longer than one supplied with pure water only, it would not prove that the alcohol either acted as food or was the cause of the prolongation

of life. When Dr. INMAN will show by any well-conducted series of experiments, that a single drop of alcohol is actually produced or generated in any organ, structure, or secretion of the healthy human body; or that any quantity of alcohol taken into the system from without actually furnishes organic atoms for the nourishment of any structure, then he will have done something towards settling the vexed question whether "Alcohol is food." Alcohol is an agent possessed of well-known and easily recognized properties. Its presence in any of the fluids or solids of the human body is easy of detection by the proper tests. These fluids and solids have been examined and analyzed again and again, by the most eminent chemists and chemico-physiologists of all countries; but in no instance have they found a drop of alcohol, unless it had been previously introduced into the system from without. If "nature" had really "provided in the salivary glands, the liver, and the lungs of every mammal an apparatus for converting all food, especially farinaceous, into alcohol," would not some of these analytical investigators have detected, at least, traces of the existence of this well-known agent? And do not the uniformly negative results of all analysis, so far as regards the presence of alcohol afford *some* "evidence that such conversion (as food into alcohol) does *not* take place," in the living system? In fact, does not every intelligent student of physical science know, that alcohol is never the product of any living vital action in any part of either the animal or vegetable kingdoms of the universe; but is solely the product of destructive decomposition or fermentation taking place in inanimate or dead matter?

In the name of science and common sense, we ask when there will be an end of such loose, illogical, and dogmatic conclusions as those put forth by Dr. INMAN, concerning the conversion of food into alcohol or alcohol into nutritive matter for the tissues? In the popular mind, alcohol has long been the guardian angel with the flaming sword turning every way to guard the tree of life. According to the popular notions, it is equally efficacious in protecting the human system against the cold of winter and the heat of summer; against the dry and scorching air of the

desert and the fogs and vapors of the marsh, etc., etc.; and, at the present time, it has well nigh reached the same ubiquitious position in the professional mind. We are told to give it in the water we drink to prevent disease; to give it in the active phlegmasia as acute pneumonia; to give it still more largely in the low typhoidal forms of disease; to give it as a medicine; to give it as food; to give it as a preventive before disease begins; to give it as a curative when disease exists; to give it as nourishment after the disease has left; and, finally, Dr. INMAN gravely tells us that the digestive organs simply constitute an apparatus for converting *all food* into alcohol. What a happy thing it would be for the human race if, taking this proposition of Dr. INMAN to be true, that all food, and especially farinaceous, is converted into alcohol by the digestive organs, they would act upon the legitimate practical inference, that it would do just as well to eat a dish of rice or potatoes or drink a cup of molasses, as to drink a glass of wine or whiskey.

RESIGNATION OF ARMY SURGEONS.—We learn that several of the more eminent and experienced surgeons in the volunteer part of the army have resigned. Among them we notice the familiar names of Dr. CROSBY, of New Hampshire, and Dr. D. PRINCE, of this State. Both had occupied the position of Brigade-Surgeon; and both had maintained a high reputation on the field of active service. They will be cordially welcomed by their hosts of friends at home; yet our army can hardly afford to lose the services of such men at the present time.

ARTIFICIAL LIMBS FOR SOLDIERS.—The last Congress appropriated a fund for supplying artificial limbs to maimed soldiers; and the surgeon-general appointed a commission to devise a proper method of expending the same. This commission, consisting of Drs. VAN BUREN, GROSS, J. M. WARREN, and SATTERLEE, has decided to allow each patient fifty dollars for a lower and twenty-five dollars for an upper extremity. The same commission selected as manufacturers of artificial limbs, Drs. E. D. Hudson, Douglas Bly, and Mr. Selpho, of New York; Mr. Doug-

las, of Springfield, Mass.; and Mr. Palmer, of Philadelphia. Patients needing artificial limbs can apply to either of these men, and obtain the amount of pecuniary aid mentioned above.

Dr. John C. Cheeseman, an eminent surgeon of New York City, died Oct. 11th, 1862, in the 75th year of his age. He was for many years one of the surgeons to the New York Hospital, and a trustee of the College of Physicians and Surgeons.

Hospital Inspection.—Drs. Bowditch and Ellis, of Boston, are already engaged in the work of inspection of our army hospitals, under the direction of Sanitary Commission. We think they are faithful and good men for the work.

Editor Medical Examiner:—In reply to a scurrilous article in the September Number of the *Medical Journal*, evidently intended for me, I simply state that self-respect forbids me to write another word in this controversy. Leaving the whole matter to the calm judgment of the enlightened members of the profession. I remain, Mr. Editor, very respectfully,

R. ROSKOTEN.

Physician's Hand-Book of Practice for 1862: By William Elmer, M.D. New York: W. A. Townsend, Publisher, 39 Walker Street.

The contents of this pocket memorandum and day-book for the physician, are as follows, viz.: Calender for the year 1863; Classification of Diseases; Dr. Marshall Hall's Ready Method; Medicinal Weights and Measures; Abbreviations of Medical Properties and Remedies; List of Remedial Agents; Balnea Medicata; List of Incompatibles; Remarks on the Writing of Prescriptions; Examples of Extemporaneous Prescriptions; Poisons and their Antidotes; Diagnostic Examination of the Urine; The Pulse:—Table of, and other Characters; Explanation of Signs, etc., to be used in the Record; Names and Addresses, Bills, and Accounts; Record of Practice and Treatment; Obstetric Calender; Obstetric Record, Blanks; Wants and General Memoranda; Nurses.

PHYSICIAN'S POCKET MEMORANDUM: For 1863. By C. H. CLEVELAND, M.D. Cincinnati: BRADLEY & WEBB, Printers.

The contents of this work are as follows: Preface; List of Medicines and Classification; Medicines not Classified; Abbreviations used in Prescriptions; Accidents and Emergencies; Poisons and Antidotes; Post Mortems; Preservation and Embalming; Prescription of Medicines; Signs used in Record of Practice; Memoranda of Practice; General Memoranda.

EXPERIMENTS ON THE FORMATION OF INFUSORIA IN BOILED SOLUTIONS OF ORGANIC MATTER, ENCLOSED IN HERMETICALLY SEALED VESSELS, AND SUPPLIED WITH PURE AIR.—Dr. Jeffries Wayman relates (*American Journal of Science*, July, 1862,) some very ingenious and interesting experiments to elucidate this subject.

Pasteur, in his admirable researches on fermentation, has brought forward experimental evidence to show that this process depends upon the presence of minute organisms in the fermenting fluid, and that the source of all such organisms is the atmosphere. In support of this opinion he asserts, that when a fluid containing organic matter in solution is put into a flask, and "boiled two or three minutes," and supplied only with air which has been filtered by passing through a tube heated to redness, and the flask is then hermetically sealed, no fermentation takes place, no organisms are formed, and that the contents remain indefinitely without change. But if the same solution is exposed to the air in its ordinary condition, it becomes filled with various living forms. Out of a large number of experiments prepared in the manner above described, he has not known one to give a different result from that mentioned. He further states that if the neck of the flask is drawn out into a very slender curved tube of several inches in length, the contents boiled, and then allowed to cool without the end of the tube being closed, so that the air enters at the ordinary temperature, and has free access to the interior of the flask, even then no fermentation takes place, and no organisms appear. His explanation of this is, that the air which enters first, meets with the hot steam, and the spores or organisms contained in it are killed; while those which enter the tube later move more slowly, and are deposited on the moist walls of it without entering the body of the flask.

The results of Dr. Wyman's experiments have been quite dif-

ferent, and living organisms have made their appearance, in some instances, where even greater precautions were taken than those mentioned by Pasteur. "The boiled solutions of organic matter made use of," by Dr. W., "exposed only to air in hermetically sealed vessels, and exposed to boiling water, became the seat of infusorial life.

These experiments, Dr. W. observes, "throw but little light on the immediate source from which the organisms in question have been derived. Those who reject the doctrine of spontaneous generation in any of the forms in which it has been brought forward, will ascribe them to spores contained either in the air enclosed in the flask, or in the materials of the solution. In support of this view it may be asserted, that it has been proved by the microscopical investigations of Quatrefages, Robin, Pouchet, Pasteur, and others, that the air contains various kinds of organic matter, consisting of minute fragments of dead animals and plants, also the spores of cryptogamous plants, and certain other forms, the appearance of which, as Quatrefages says, suggests that they are eggs. We have made some examinations of our own on this subject, but it would be unnecessary to give the results in detail. We will simply state, that we have carefully examined the dust deposited in attics, also that floating in the air collected on plates of glass covered with glycerine, and have found in such dust, in addition to the debris of animal and vegetable tissues, which last were by far in the greatest abundance, the spores of Cryptogams, some closely resembling those of Confervoid plants, and with them, but much less frequently, what appeared to be the eggs of some of the invertebrate animals, though we were unable to identify them with those of any particular species. We have also found grains of starch in both kinds of dust examined, to the presence of which Pouchet was the first to call attention. When compared with the whole quantity of dust examined, or even with the whole quantity of organic matter, both eggs and spores may be said to be of rare occurrence. We have not in any instance detected dried animalcules which were resuscitated by moisture, and when the dust has been macerated in water, none have appeared until several days afterwards, until after a lapse of time, when they would ordinarily appear in any organic solution.

"Those who advocate the theory of spontaneous generation, on the other hand, will doubtless find, in the experiments here recorded, evidence in support of their views. While they admit that spores and minute eggs are disseminated through the air, they assert that no spores or eggs of any kind have been actu-

ally proved by experiment to resist the prolonged action of boiling water. As regards Vibrios, Bacteriums, Spirillums, etc., it has not yet been shown that they have spores; the existence of them is simply inferred from analogy. It is certain that Vibrios are killed by being immersed in water, the temperature of which does not exceed 200° F. We have found all motion, except the Brownian, to cease even at 180° F. We have also proved by several experiments that the spores of common mould are killed, both by being exposed to steam, and by passing through the heated tube used in the experiments described in this article. If, on the one hand, it is urged that all organisms, in so far as the early history of them is known, are derived from ova, and therefore from analogy, we must ascribe a similar origin to these minute beings whose early history we do not know, it may be urged with equal force, on the other hand, that all ova and spores, in so far as we know anything about them, are destroyed by prolonged boiling: therefore, from analogy we are equally bound to infer that Vibrios, Bacteriums, etc., could not have been derived from ova, since these would all have been destroyed by the conditions to which they have been subjected. The argument from analogy is as strong in the one case as in the other.—*Amer. Jour. Med. Sciences.*

Inversion of the Uterus occurring Spontaneously Eighty Hours after Delivery.—Some obstetricians believe that inversion of the uterus is always the result of some cause over which the attendant has control, and that in most cases it is caused by undue traction on the cord. Dr. Radford, however, has clearly established that it may occur spontaneously without any fault of the midwife's, and that it may occur not only immediately after delivery, but also after an interval of some days. Mr. Charles Cowan relates (*Edinburgh Medical Journal*, June, 1862,) a case which is conclusive as to this point.

The subject of it was a lady, 40 years of age, always in the enjoyment of good health, who was delivered with the forceps, after a pretty smart labor of 24 hours' duration, of her first child, a strong healthy boy, at 4 A.M., on Thursday, the 15th November, 1861. The placenta was found in the vagina, ten minutes afterwards, and removed. In about half an hour there was slight hemorrhage, which was easily restrained by the application of cold to the pubic region, which caused the uterus to contract firmly: a little brandy was likewise administered, as I attributed the hemorrhage to the weak state of the patient, occasioned by the protracted labor, and by my efforts to accomplish

delivery with the forceps, which occupied me more than half an hour.

I remained with her half an hour longer; and to satisfy myself that all was right I removed the bandage, and, on manipulating the abdomen, I discovered the uterus firmly contracted, about the size of a cricket ball, in its normal situation. The bandage having been replaced I administered a dose of morphia, and took my leave.

For the first three days after her confinement, we had the patient giving the most satisfactory evidence of speedily attaining convalescence. The pulse becomes natural; the appetite returns; the secretions are normal; the breasts are distended with milk, and the mother rejoices in the prospect of being able to nurse her child. Her sister finding her so well on the Saturday afternoon, (two days and a-half after delivery), returns home, and on the Sunday the patient expresses a wish to get up. What could be more gratifying than this? What could more strongly indicate a rapid restoration to health? So far it appears that all is well; but on Sunday at mid-day, about 80 hours after delivery, a change takes place. Eager to test her strength she leaps out of bed, comes to the ground with some degree of violence, staggers to the fireplace, and falls into a chair in a state of syncope.

There had undoubtedly been mischief, and that of no light character, for from this moment a train of symptoms of the most alarming description followed, becoming hourly more and more serious, until the cause was discovered in the invertion of the uterus, and replacement was accomplished. She now again began to show some slight signs of amendment; and we cannot but conclude that the inversion was occasioned by the hurried leap out of bed, especially as the unfavorable symptoms presented themselves then for the first time; and we have further proof of this in the amelioration of these symptoms, commencing almost as soon as the displacement of the uterus was reduced.—*Amer. Jour. Med. Sciences.*

Researches on the Influence of Culinary Salt and Coffee on the Metamorphosis of Tissue.—Culinary salt, according to the researches of C. Voit, is a powerful stimulator of the metamorphosis of tissue; it increases, by means of its physical properties, the capillary circulation of fluids in the organism; it increases the oxidation of albumen, and through this the quantity of urea excreted. Culinary salt is also a true diuretic. In order to excrete the salt from the body, water is re-

quired; this water passes always through the kidneys, (the only channel for the excretion of culinary salt in the dog,) and is, if the supply of water from without is limited, abstracted from the tissues.

Voit's experiments with *coffee* on a dog led to the inference that coffee does not, as is usually assumed, diminish the metamorphosis of nitrogenous tissue, and the excretion of urea, but, on the contrary, rather increases these processes. On the whole, the dog appeared to be more lively after the use of coffee. The author made also experiments with *coffein* on frogs, and found it to cause, at first, increased irritability of the nervous system, a tendency to reflex-movements and to tetanic convulsions; later, however, phenomena of paralysis. The pupil becomes dilated; the capillary vessels are filled with blood; the heart's contractions are at first increased, later reduced in frequency, they are arrested during the tetanic paroxysms. The author attributes the principal effects of coffee to its action on the nervous system, not to its influence on the tissue-change. The nervous system being rendered more susceptible, the same exciting cause produces a greater effect. Coffee thus refreshes, Voit thinks, the fatigued body, renders the lassitude less perceptible, and in this manner enables us to endure prolonged exertion. The experiments on the influence of *bodily exercise* (treadwheel) on the tissue-change in the well-known dog lead to the unexpected result, that the excretion of urea was not at all, or only very slightly, increased by bodily labor. Voit infers, therefore, that muscular action does not cause increased decomposition of albuminous substances, while it is accompanied with a greater consumption of fat. As the decomposition of albumen is not the source of the production of force, connected with muscular contraction, Voit is inclined to look for it in the development of electricity.—*Brit. and For. Med. and Surg. Journal*, July, 1862.

Varicose Ulcers of the Leg.—In a paper read before the Midland Medical Society, J. H. Houghton, surgeon to the Dudley Dispensary, advocates the use of the flannel bandage suggested by Mr. Hunt, in 1857. Cases looked upon as next to incurable, can be managed, with this treatment, without difficulty, and a speedy cure is effected without confinement, or the patient's relinquishing his usual occupation. The wound is strapped with a few strips of soap-plaster, or dressed with some simple dressing, and the bandage applied by first making one turn round the bottom of the leg, then one under the sole of the

foot, over the instep, round the back of the foot, again over the instep, till the lower edge of the bandage passes round the foot at the root of the toes, about two turns more round the foot, and then spirally up the leg to the knee. The roller naturally follows this course, and requires no turn till it reaches the calf; if properly applied, it will lie quite even and remain immovable for an indefinite period. In some cases, the patients walked twice a-week nine and twelve miles to have the leg dressed, and followed their usual occupations all the time. Quinine and iron, sarsaparilla and iodide of potassium, etc., are given internally, where indicated. A material called "domette" seems to be preferable to flannel. The roller must be accurately made two and a-half inches wide, and in one piece, eight yards long. The success of the treatment is confirmed by I. K. Spender and H. Crisp, in the *British Medical Journal*. The former recommends, in the place of the soap-plaster, an ointment containing a large quantity of an alkaline earth, as chalk, spread thickly on lint, or the compound lead-plaster of the Pharmacopœia. Mr. Mitchell, of the Lancaster Infirmary, gives in the *Lancet* the following directions for treating old indolent ulcers. First wash the leg well, then fill the ulcer with finely powdered carbonate of iron, and apply a large linen pad, excluding all moisture; then envelop the whole limb in a starched bandage, for about three weeks. The patient may walk a little every day.—*Amer. Med. Times.*

The Liver in Cholera Infantum.—Dr. J. Lewis Smith, Curator of the Nursery and Child's Hospital, has published (*American Medical Times*, Sept. 20th, 1862,) some interesting investigations which confirm the prevalent belief that the liver plays an insignificant part in the pathology of the summer complaint of children. "The green stools," he justly remarks, "which have long been referred to the biliary secretion, must be mainly due to causes operating in the intestines, for I have repeatedly noticed that the green color does not appear till we reach the lower part of the jejunum, or upper part of the ileum. Examined under the microscope the green matter is found to be in little fragments or masses, as if produced in the crypts of the intestines."

Dr. S. gives the result of the *post mortem* appearance of the liver in 37 cases. No evidence is afforded by these of any congestion, or torpidity, or hyperactivity, or perverted secretion, or abnormal size of the liver. "In most of the cases the liver was examined microscopically, and the only fact worthy of note

observed was the variable amount of fatty matter. Sometimes it was in excess, sometimes in moderate quantity, or rather deficient, and sometimes, apparently, in greater amount in one portion of the organ than in others."

MEDICAL COUNCIL OF GREAT BRITAIN.—The doings of this council, from which so much was expected, seems not to have been satisfactory. Its attempts to regulate and improve medical education, and to purge the profession from unworthy members, have been failures; and its new pharmacopœia, which has cost heavily in time and money, is now under protest, in consequence of the council committing the blunder of introducing new weights and measures, which it is contended would create great confusion.

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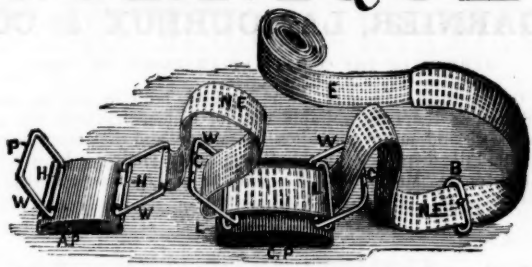

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